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"IN INDUSTRY AND COMMERCE ALL THINGS ARE BECOME NEW"

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BUSINESS REVIEW

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THE PROFESSION OF BUSINESS

By A. LAWRENCE LOWELL

PROFESSIONS have been among the greatest agencies in civilization, and as human society becomes more complex it produces new ones which, if the society is progressing, help its advance. A profession is composed of rivals, each striving for a share of the employment which at any one time is limited in amount, and of course rarely enough for everyone to have as much as he desires; yet to use the psychological term that has come into popular speech, it is a group, with a group consciousness and a group spirit. Over and above this rivalry it has a sense of a common object, one larger than the personal welfare of the members, one that seeks to raise the level of the profession itself and increase its usefulness to mankind. A true profession strives not to restrict the number of its practitioners, but rather to increase them, and especially to improve their preparation for the work they are to do.

These qualities have, indeed, not always been conspicuous, or at least they have been present at different times in unequal measure. Moreover, outsiders have often misunderstood the attitude of professions, and ascribed to them a selfishness, an exclusiveness, an arrogance, and a pedantic adherence to arbitrary and irrational rules of practice that have given rise to criticism and satire. Everyone is familiar with the gibes at lawyers, and in backward communities physicians have sometimes during epidemics been exposed to actual maltreatment. No doubt some of the distrust felt for professions has at times been justified, for any group of men without intending it is liable to narrow and warped views; but, on the other hand, the outsider unfamiliar with the task of the profession is unaware of the nature of its ethical problems and likely to misinterpret them. In spite of defects and shortcomings, which may be freely admitted, it remains true that the great professions have been among the chief agencies of progress. Although lawyers have from time immemorial been charged with using technicalities or eloquence to pervert justice, no serious person can doubt that law, which is the cement that binds social order and holds

the whole fabric of civilization together, has been the work of the legal profession. Physicians have striven not only to relieve suffering and preserve life, according to the knowledge of their day, but as a profession have advanced the knowledge of disease and health, have learned to prevent the spread of plagues that formerly devastated whole communities and have brought us to the stage of medical control over illness that we enjoy today. These things have happened in large measure because of the force of the professional spirit that has placed before members of the body as a whole an object greater than that of personal success.

Professions have arisen by carving out of the common occupations of men who work with their brains some special field to which they devote exclusively their attention. It has been a case of division of labor among brain workers. The evolution of the priest, in savage times combined with mystic powers of healings and soothsaying, goes back beyond the earliest records. In historic times we can trace the development of the lawyer, the advocate and the judge. Later, after a checkered, and sometimes rather ignominious career, medicine emerges as a real, and finally as a scientific, profession. Later still engineering appears, disentangling itself from more mechanical pursuits; and so on through the whole series of the modern professions. As, according to the nebular hypothesis, during the process of condensation parts of the nebula were thrown off which compacted into planets separated from the contracting mass; so from the undiscriminated mass of occupations distinct professions are from time to time detached.

Within the professions themselves a change in the method of preparation has been going on. The primitive way of learning the mystery, which in some cases has continued until a recent period, was apprenticeship. The aspirant for the bar began by copying letters in a big round hand, the future physician by rolling pills. But eventually men came to see that professional knowledge was based upon principles which could be learned much more rapidly, and more thoroughly, by academic study than by the kind of apprentice work that required neither the knowledge nor the skill of the practitioner. Hence professional schools arose, some of them at early periods in the growth of education. The study of theology and law go back to the origin of the universities in the middle ages. Medicine followed somewhat later; and other professional schools have from time to time been founded, either distinct from the universities—which is more commonly the case in Europe—or as new departments thereof, the prevailing habit in America except for exclusively public service like the army and navy. In fact it would not be very rash to suggest that a basis of principles capable of being philosophically ascertained and academically taught is essential to a true profession.

If professions have developed by the segregation of pursuits, it is natural that with the growth of specialization new ones should be evolved, and that they should give rise to schools designed to prepare for them. That is the meaning of the recent schools of commerce or business. In their widest significance these words, commerce or business, cover a multitude of activities of many kinds and grades, indiscriminate in their variety. Still parts of them, and especially those portions which require careful thought, have much in common, and a confidence seemed justified that the administration,

at least, of industry and trade in many of their different branches could be carved out of the general mass of productive occupations and treated as a profession. For that reason the business school at Harvard University was given the restrictive name "School of Business Administration." It was founded on the belief that principles underlie the subject capable of being worked out inductively from the results of observation, comparison and reflection, capable also of being taught, especially by the solution of selected problems in which those principles are involved.

For the success of a school founded to prepare for a new profession two things are required. First, that the men practicing that occupation should be convinced that they are members of a profession, with a sense of solidarity, of common interests and aims, with a motive above personal profit, and a desire to promote the best preparation therefor. Secondly, that the school itself should have a distinct professional atmosphere of its own, so strong that from the very moment of entrance the student should feel the enthusiasm, the responsibility and the dignity of belonging to a powerful and honorable profession.

FEDERAL RESERVE BANK POLICY
THE NEED OF A DEFINITE STATEMENT

By CHARLES J. BULLOCK, O. M. W. SPRAGUE, and W. B. DONHAM

THE vacancies which have existed on the Federal Reserve Board are peculiarly unfortunate just now, for very important tasks face this Board. It is difficult to see how the various regional banks and the Federal Reserve Board itself can formulate and much less how they can state to the public any definite basis of general policy unless the Board is thoroughly organized. Yet the need for the early formulation and statement of such a policy is great. The industrial sections of the country are only now recovering from the most serious business depression of many years, while the farming communities are still suffering from the uneven relative movements of prices. The sane decision of many problems still facing us is impossible until the community knows what policies will control our banking balance wheel.

The creation of the Federal Reserve System by centralizing our national gold reserves made them much more effective than before, and largely increased the potential volume of credit over pre-Federal Reserve days. In addition to this the country today possesses practically twice as much gold as it did in the year 1913. The increase is approximately $2,000,000,000, the total gold in the country being now nearly $4,000,000,000. Of this total over $3,000,000,000 is in possession of the Federal Reserve Banks where it is directly available as a banking reserve. Over $1,000,000,000 of this gold has come in since the summer of 1920, so that our credit basis is much larger than it was at the peak of the inflation period of 1919-20. Adopting Professor Persons' estimate that under the Federal Reserve System the possible volume of credit which can be supported on a given quantity of gold is not less than ten times the amount of gold as compared with about eight times under the old National Bank Act, the available credit at present is at least two and one-half times as great as in 1913.[1]

On the other hand, the financing of the war has brought about an increase in price levels in this country as well as abroad which will presumably continue for a long period. The fact that this inflation is based in this country on gold and in European countries on paper can for the present purpose be ignored. This higher price level requires a larger volume of credit than was necessary before the war, and it justifies such continued use of Federal Reserve facilities and of the increased gold supply as may be really necessary for the conduct of the business of the country on this new basis. We have just witnessed the serious consequences of an inevitable deflation of credit which lowered prices to a marked degree, but not to a level even approximating the 1913 levels. This experience makes it obvious that

[1] Warren M. Persons, *The Basis for Credit Expansion under the Federal Reserve System; The Review of Economic Statistics*, Preliminary Vol. II, p. 21. The theoretical range of credit is estimated to be from 10 to 25 times the amount of gold in the reserves. The minimum of 10 times is always less than the practical limit.

the consequences of an effort to deflate prices to anything like the 1913 basis would be far more serious than the consequences of accepting something like the present level of prices as a normal basis. No one has this 1913 basis in mind and certainly it may be assumed that such a policy will not be adopted by the Federal Reserve System. Deflation to 1913 average prices would carry with it the ruin of a large proportion of the industries of the country or would necessitate a downward readjustment in wages and similar items in our national economy which is quite out of the question. It would also aggravate seriously the difficulties already existing in raising sufficient revenues to make headway against the government indebtedness left by the war.

The speculative inflation of 1919-20, on the other hand, the hardships caused by the uneven movements of prices of different commodities and the uneven effects of violent general price changes make it also certain that the injustice caused by a further marked inflation in price levels would be much more serious than the maintenance of present average price levels as a new normal. This does not mean that present relative price levels should be maintained. For example, prices of farm products have suffered severely in comparison with other prices during the violent changes of the last business cycle, and there will unquestionably come in time a leveling out of such inequalities. Farmers will benefit by such restoration of prosperity as may be possible without inflation, but if through the use of our present excessive bank reserves we enter upon another period of wild inflation limited to the United States, they will lose heavily. Their prices are too largely controlled by international price movements to advance relatively to the same extent or with the same rapidity as most other prices. With the present weak condition of European markets, large increases in prices here not paralleled by increases in prices abroad would check exports of foodstuffs and by glutting the domestic market keep our foodstuff prices relatively at too low a level. It is doubtful if any group in the country (unless it be a certain type of speculator) would benefit from another period of wild inflation with all its attendant evils and particularly with the inevitable instances of further maladjustments of prices.

There would in all probability be fairly general agreement on these two points, that both deflation and inflation from present general levels are to be avoided. This should not, however, result in a failure to recognize the cyclical character of business and credit movements. These should be assumed as the background of any Federal Reserve policy. Reasonable credit elasticity both for expansion and for contraction should be provided. At the present time it is obvious that the stress and strain of the last two years cannot be removed and the necessary readjustments accomplished with reasonable speed unless we have a degree of prosperity which will require some further expansion of credit in the period immediately ahead of us. Frozen credits and inventories are by no means entirely liquidated.

Under the old conditions bank reserves in the typical case were no more than adequate. The balance of international trade and payments regulated the international distribution of gold and governed price movements.[2] Any

[2] For detailed treatment of the relations of gold movements to price levels, consult the various economic treatises, e. g., Taussig, *Principles of Economics*, (3rd Ed.) Vol. 1, p. 457; Fisher, *Ele-*

persisting shortage in bank reserves or any considerable exodus of gold was understood not only by bankers but by the business public as a signal which warned of higher money rates, a decrease in the volume of credit, a consequent lessening in general business activity and a decline in commodity prices. These changes in conditions came about almost automatically. It is true that it required good judgment on the part of individual bankers to maintain their own banks on a proper basis, because the inelasticity of our currency system made us always liable to violent financial crises. Considerable discontent was inevitable, and various unsound money movements owed their genesis to this discontent. Nevertheless, to a large extent the community recognized the inevitable and impersonal quality of the situation and looked upon the results, lamentable though they might be, as the effects of economic laws operating through an unsound banking system rather than as the results of individual bad judgment on the part of bankers.

The Federal Reserve System itself was the result of this righteous discontent with the workings of our old national bank act, but because of this very fact the problem now facing the Federal Reserve System is serious. The community expects the new system to prevent the old violent fluctuations. Up to date this has not been the result. Financial crises have been eliminated, but wild fluctuations in the volume of business and in commodity price levels have not. For this the exigencies of war financing and the disorganization of world industry and finance which followed the war are primarily responsible. Unless the Federal Reserve Banks take action in time to prevent it, however, the large increase in gold available for reserves and the more effective use of reserves by the system may easily in the period now ahead of us bring about another serious inflation with attendant large changes in price levels similar to the inflation in 1919. No adequate warning will be given by jeopardized reserves and the possibility of extravagant inflation is potentially even more serious than in 1919. International payments will probably, for an indefinite time, be on an abnormal basis and we cannot rely on exports of gold to reduce bank reserves at the danger point and to control prices. International money movements can hardly become normal until extensive financial and monetary readjustments occur in the leading countries of Europe. Under these circumstances the Federal Reserve Banks should take such action as may be necessary to prevent the kind and extent of inflation which will result if credit is allowed to expand until their reserves are in jeopardy. Otherwise we cannot fail to have a repetition of the unsound expansion of 1919-20 and the serious after-effects of 1920-21.

Need of a Certain and Well-defined Policy

Since the old automatically acting warning through the shifting of international balances and through dangerously depleted bank reserves is not now effective, some substitute is necessary. Moreover, this substitute must be one which the public can understand. It may not be difficult to define the policy of the Board. The difficulty will come in devising methods of applying the policy adopted and in the political

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Footnote 2 continued from page 133:
mentary Principles of Economics, pp. 204-209; Seager, *Principles of Economics,* pp. 369-370; Ely, *Outlines of Economics* (3rd Ed.), pp. 350-354; Clay, *Economics for the General Reader,* pp. 211-213.

aspects of the situation. As a matter of general policy, the Board should endeavor to limit the expansion of credit by raising and lowering discount rates in such manner and at such times that the volume of credit is determined by the real needs of the country whether these needs are seasonal or cyclical in their nature. Expansion should cease when the movement of prices threatens to become mainly speculative rather than related to fundamental conditions which require a larger amount of credit. It will be recognized at once that seasonal requirements should be met by the Federal Reserve Banks. The Board should also recognize the cyclical nature of business. It has the same obligation to provide moderately for the expansion side of the business cycle, that it has to prevent undue inflation, or to take care of the needs of business in periods of depression by a liberal extension of credit where it is justified. The business cycle so controlled would result in price levels and in a volume of business that varied within such reasonable limits that business men could conduct their business safely by the exercise of ordinary precautions. If such a policy were adopted now it should lead to continued good business for some time to come, but it should serve to check inflation soon enough to avoid the serious calamities of a real collapse. Any period of poor business following the expansion of the cycle would be vastly different under such a policy from the calamitous collapse of 1920.

Such, briefly stated, should be the objectives of our banking policy. The difficulty in framing the policy will come not in determining the objectives to be attained but in the determination of the time when the policy is to be carried into effect through changes in the discount rates. There are various possible methods which might be used to fix the time when the expansion should be controlled. Before suggesting any such method it is desirable to emphasize the fact that any method stated in advance which will work with reasonable certainty and with generally proper results is preferable to a more accurate method not so stated and therefore leaving the business community entirely in the dark as to business prospects. It is of overwhelming importance that a well thought out policy should be adopted, and that the method and time proposed for carrying it out should be stated clearly so that the people of the United States may know the basis upon which the reserve system will act. With the old warning signals inoperative, others must be devised which will give a proper basis for action by the Federal Reserve System and at the same time a basis for sane planning on the part of the business community. Without such guidance, business men cannot intelligently conduct their enterprises; and moreover, unless such a policy is clearly framed and stated in advance, the political effects on the Federal Reserve System may be such as to work incalculable harm.

There is today no reason in sight why a business man looking into the future for the next 12 months, and many business men are obliged to plan their business at least this length of time ahead, should foresee anything but reasonably prosperous times in this country. Of course, another war in Europe would affect conditions basically, and prudent men in the present unsettled state of the world may well protect themselves against this possibility by moderation in making commitments. Except for this, fundamental conditions for sound business over a considerable period are generally good. Neverthe-

less, today it lies within the power of the Federal Reserve System to affect these fundamental conditions materially. If the men in charge of its affairs decide in the exercise of their discretion to diminish the volume of credit by increases in discount rates, this would within a short time profoundly affect industrial and business activity. It is admittedly the duty of the management of these banks and of the Federal Reserve Board to take such action when it shall become necessary to prevent improper inflation, but today no one knows what their views are as to what constitutes inflation or when they propose to act.

Business men cannot plan their affairs intelligently unless they have some guide which will enable them to forecast with a considerable degree of certainty the conditions under which the Reserve Banks will exercise their discretion. Otherwise the existence of the system introduces a new variable into the affairs of the community, the effect of which it is impossible to foresee in any way; namely, the uncontrolled judgment of a small group of men. The fact that this judgment will be the result of serious, thoughtful, and sane consideration of the problems does not remove the necessity of furnishing the business public with a clear indication of the general grounds upon which discount policies are to be shaped.

It is entirely proper that a small group of men chosen as these men are and keeping in close touch with the situation should have the duty of determining, under conditions well known in advance by the community, when action is necessary to prevent the evils which would inevitably flow from the extremes of inflation and depression. The system is managed by men of ability and there is no considerable section of the community which desires such an orgy of inflation as we witnessed in 1919. But 110,000,000 people can hardly delegate permanently to any small group of men the power to decide in their undefined personal discretion, when the brakes shall be put on industry and a period of declining prices and hesitating business substituted for apparent prosperity.

The need for control clearly exists, as almost the entire community will recognize and admit. But the control must be applied, in accordance with principles known in advance, because certain well understood facts or events have occurred, not as a result of a decision based on intangible and undefined human judgment of current conditions. Otherwise, the situation will be politically impossible, and may threaten the very existence of the system. The Federal Reserve Board, therefore, as soon as it is again fully organized, should in agreement with the regional reserve banks define the proposed basis of action so explicitly that the community at large may estimate with a good deal of accuracy when the business situation is developing in such a way that it will require the Federal Reserve Banks to make decided increases in discount rates. The method should be one which will work in the main in an intelligible fashion on the basis of sound policies already laid down, and the publication of such a definite guide is much more important than the theoretical perfection of the test chosen. Business certainty, as a basis for executive policy, is the principal thing needed. Minor fluctuations in discount rates will of course be desirable from time to time for special and temporary reasons. What is referred to here is the major movement which affects the whole current of business.

Methods of Fixing the Time for Exercising Control

Various methods may be considered for determining when discount rates should be raised with the object of checking improper inflation. For example, in theory the rates might be readjusted upward when the volume of production ceases generally to increase under the stimulus of greater activity. Beyond this point it may well be agreed that the upward movement of prices represents mainly speculative and unsound inflation. While this is probably true, the immediate difficulties in applying such a test are great. There is as yet no generally recognized index of the volume of production and there is no thoroughly adequate mass of data on the subject. When such data are available and a proper index of production has become well established, this might give an excellent basis for determining Federal Reserve policies. The validity of such an index should, however, be thoroughly demonstrated and accepted before it is used as the basis for action.

Similar objections apply to other elaborate statistical bases for action. At the moment what is needed is a simple basis for action which should, for reasons just mentioned, be readily stated and widely understood.

There are reasonably effective methods which would comply with these conditions, and the clear statement of some such method as the basis of Federal Reserve policy would give Congress an adequate opportunity to substitute other tests if the method adopted appeared unsatisfactory. It is not our purpose to attempt to lay down the method which should be adopted, for the banks in the system are in the best possible position to determine this question. One possible approach to the problem could, however, be worked out along the following lines:

The Federal Reserve Board and the regional banks might recognize and state the fact that there is in the country some such amount as $1,000,000,000 of gold in excess of the normal amount and they could further state definitely their intention to recognize this as an essential fact in their treatment of reserve ratios. During the last year or more prices have been comparatively stable and the reserve ratio of the Reserve Banks has been in the neighborhood of 75%. If $1,000,000,000 could be deducted from the reserves of the Federal Reserve System, this ratio would be reduced at the present time to something like 50%, which would still allow for a considerable further expansion of business before the danger point was reached. If then the various regional banks and the Federal Reserve Board were to state that the present 75% reserve will be treated by them as the equivalent of 50% reserve, this would give a basis for executive decisions and would enable business men to estimate the probable future course of money rates. The exact readjustment in ratios which seems best should be determined by the Federal Reserve System and published at an early date.

Any statement of such a policy should be accompanied or preceded by a statement of reasons why part of the gold in the reserves is not considered available as a permanent reserve. It is a fair assumption that gold will ultimately be, to some extent, redistributed over the countries of the world through the financial readjustment which will come in time, and nothing but evil consequences can attend the use of excess gold temporarily in the United States as the basis for further inflation.

The specific suggestion may well be entirely impractical. It is stated here as a type of approach and not as a panacea. The Federal Reserve Banks are, however, in position to work out some reasonably satisfactory solution to the problem which can be clearly stated and definitely adopted. The essential point is that some statement of policy be made not only in the immediate future but a reasonable time before it is acted upon. It will add greatly to the security with which business men face the future if this is done at an early date, and it should also immeasurably strengthen the standing of the Federal Reserve System with the entire community.

THE PROBLEM OF RAILROAD CONSOLIDATIONS

Its Nature and the Factors Involved in Its Solution

By JOHN E. OLDHAM

I

ONE of the most interesting and important features of the Transportation Act is its provision for consolidations. The Act contemplates the merging of all the railroads of the country into a few large systems under the direction of and in accordance with plans to be prepared by the Interstate Commerce Commission. The Act specifically provides that the Commission in preparing its plan shall aim to preserve competition as fully as possible. It is inevitable, however, that much of the existing competition will disappear if consolidations are to be made on such an extensive scale as is indicated by the intent and the wording of the law.

Competition, heretofore, has been the foundation of the railroad policy of the country. For many years before the passage of the Transportation Act practically all important railroad consolidations which were undertaken were dissolved by action of the Federal Courts if they appeared to violate the principle of competition even to the smallest extent, and many consolidations which might well have been made with advantage to the public and the railroads alike, were given no more than passing attention by railroad owners through fear of prosecution under the Sherman Anti-Trust law. The insistence that all existing competition be maintained regardless of its advantages or disadvantages to the public is undoubtedly largely responsible for the transportation system of the country in its present form—a system composed of units so widely different in their characteristics as to increase the difficulties of public regulation if, indeed, it does not make impossible the satisfactory administration of any system of regulation whatsoever.

It is clear that the Transportation Act declares a new railroad policy for the future under which competition is to be of secondary importance; under this policy railroad mergers which heretofore have been forbidden are to be encouraged and promoted. The early drafts of the Transportation Act even went so far as to contain provisions for making such consolidations compulsory, if they were not voluntarily undertaken by the railroads themselves within a specified time. This compulsory provision was omitted from the final draft of the Act, but the fact that it was long and seriously contemplated is evidence of the belief that the policy of the past in respect to competition had been unwise and that a different policy for the future was necessary.

In any discussion of railroad consolidations there is need to understand the kind of competition which is to be preserved and the kind which must be eliminated since only in the light of such an understanding will it be possible to prepare a plan of consolidations which will carry out the purposes of the Transportation Act.

The insistence upon competition heretofore was undoubtedly due to the common belief that competition among railroads, as well as among corporations engaged in general industry, was necessary for the protection of the public; that lessening of competition in transportation tended toward a monopoly which would be taken advantage of to serve only the selfish purposes of managements and stockholders and which would compel the public to pay higher prices for service than would be the case under competitive conditions. Because of this all proposed combinations were looked upon with suspicion and statutes enacted for the purpose of preventing monopoly in industry were made to apply to all new proposals for railroad consolidations.

The maintenance of competition as a means of securing cheaper and more satisfactory service, until recent years, applied to public utility as well as to railroad and industrial companies. In the case of the public utility companies, when it became clear that competition increased the cost of service to the public, especially because it resulted in unnecessary duplication of facilities and thus required returns to be earned on excessive property values, and, further, when it became clear also that the public could be protected against unfair charges for service by a proper system of public regulation, the policy of competition was gradually abandoned and the policy of complete monopoly under public regulation was established. At the present time gas, electric, street railway and telephone service is furnished quite generally throughout the country by companies each one of which has a monopoly of the business in the field in which it operates and each of which, in turn, is subject to such regulation as is believed to be necessary to protect the public. To a large extent the utility companies have surrendered voluntarily their special franchises and have accepted indeterminate franchises in their places with the understanding, amounting to an agreement, that each company is to have the sole occupancy of the field in which it operates and that it will be allowed to charge such rates as may be necessary to produce a fair return upon the property it devotes to the service.

The progress that has been made in the regulation of public utilities under these conditions has been due primarily to the fact that principles of regulation have been adopted which recognize that the public which is served and the owners of the property which furnish the service have both rights and obligations which are clearly defined. The public is entitled to be served at a reasonable cost; the owners of the property are entitled to a fair compensation for the use of their properties. The public which is served is obligated to pay for the service it receives an amount sufficient to cover the expenses incident to efficient operation and adequate maintenance of property, and sufficient also to provide a fair return upon the value of the property used in providing the service. The owners of the property are obligated to furnish adequate service at rates that will yield a fair return but no more than a fair return on the value of the property. A fair return on a capitalization which is equal to the value of the property is recognized both by the public and by the owners as a part of the cost of service and there is common agreement that the rates shall be made to cover such cost and no more and no less. This method of rate making is the service-at-cost method, whether so termed or not. It represents a policy of rate making which, wherever admin-

istered with intelligence and thoroughness in relation to public utility companies, has proved generally successful and satisfactory.

While the policy of monopoly under public regulation was thus becoming established for the utilities, the policy of competition under public regulation was persistently maintained for the railroads. The regulation of the railroads under these conditions proved generally less satisfactory than the regulation of the utilities. For the railroads there was no single authority, as in the case of the utilities, invested with the duty and the power of determining and establishing rates which would produce the income to which the owners of the property were entitled. The utilities were regulated for the most part by a single authority; the railroads, on the other hand, were regulated by commissions in the several states in which they are located and also by the Interstate Commerce Commission with relation to their interstate activities.

II

From about the year 1910 there developed a growing appreciation of the fact that the railroad policy of the country was leading towards disaster for the railroads and the public alike. The reasons for this fact were not then wholly understood. It was understood that the difficulty was due in part to an unsound and inadequate system of public regulation. It was not so generally understood that a railroad system, composed of units so widely different from each other in their operating and financial characteristics as were the units comprising the railroad system of the United States, could not be satisfactorily regulated by any regulatory system which could be devised.

The gravity of the railroad situation had increased to such an extent by 1915 as to lead President Wilson to use the following words in a special message to Congress on December 7th of that year: "The transportation problem is an exceedingly serious and pressing one in this country. There has from time to time of late been reason to fear that our railroads would not much longer be able to cope with it successfully, as at present equipped and coordinated."

In response to this message Congress created a special fact-finding committee of its own members which became known as the Newlands Committee. This Committee in the summer of 1916 began an extensive study of the railroad problem. Before it had finished its investigations the railroads were taken over by the Government. The work of the Newlands Committee was never completed. Congress continued, nevertheless, through committees of the Senate and the House, to investigate the problem, proceeding along the lines initiated by the Newlands Committee. The Transportation Act, enacted into law in March, 1920, gave expression to conclusions based upon these various investigations.

Throughout this long period of investigation no one factor was so much emphasized as the necessity of providing income adequate for a fair return for all railroads which were to continue to serve the public. It was clear that unless rates were made which would provide such income it would be impossible to maintain credit on a basis which would enable the railroads to obtain the new capital they must have if they were to expand their facilities to keep pace with the growing requirements of industry and commerce. It was clear also that the railroads would not be able to secure income sufficient to restore and maintain their credit unless new legislation should be enacted which would

establish a definite and sound policy of rate making and such further legislation as would lead to a reorganization of the railroad systems of the country which would make its units substantially uniform in character and thus equally responsive to whatever regulatory system should be established.

In considering the legislation necessary to accomplish these results the facts with which it was necessary to deal became clearly established, as well as the difficulties to be overcome. The principle had been long established by the Federal Constitution and interpreted and enforced on numerous occasions by the highest courts that the owners of property used in the public service were entitled to receive a fair return upon the value of their property. Consequently every railroad corporation, if it was efficiently managed, was constitutionally entitled to a fair return upon the value of its property, and every railroad was entitled to the same rate of return as every other road, for a fair rate of return for one is within the intent of the Constitution a fair rate of return for all.

In order that all railroads, operating as they do under different conditions and circumstances, may receive the same rate of return it would appear necessary to provide for each road a separate system of rates based upon its particular requirements. Rate making on this basis, however, was not considered by or even suggested to the committees of Congress which were concerned with the subject, a fact which may be taken as conclusive evidence of its impracticability. Although it was recognized that conditions of operation varied with the different roads and, consequently, that nothing other than a separate system of rates for each road would suffice to give each road the same rate of return as that received by every other road, yet it was at the same time recognized that rates could not be made for individual roads; on the contrary, it was recognized that there must be rates which would be substantially uniform for all roads operating within a given district regardless of the individual requirements of the separate roads. That roads could not successfully compete for the same business except under the same rates was obvious. Rates for competitive business must, therefore, be the same. That industries in different sections of the country generally could not compete successfully with each other except under similar transportation charges for similar service, while not as obvious, was nevertheless recognized to a large extent to be a fact. Rates, therefore, must be substantially uniform for noncompetitive as well as for competitive business.

It was thus seen to be necessary to establish a substantial uniformity of rates throughout a given territory, and to determine the basis upon which the rates should be established. It was clear that the requirements of those railroads, the operating costs of which were above the average of all roads within the district, could not be the sole basis for rates, for rates on this basis would produce for the railroads as a whole more than the required return, and would compel the public to pay more than the total cost of the service rendered. On the other hand, it was likewise clear that the requirements of those roads in the district, which, because of their circumstances, were able to operate at a cost lower than the average for all roads of the district, could not be the sole basis of rates, for rates on this basis would produce for the railroads as a whole less than the required return,

and the public would thus pay less than the total cost of the service rendered.

It was inevitable that the rates must be based upon average requirements, and that the correct level of rates could be determined only by taking into account the combined requirements of all the roads in any given district. In other words, it became clear that rates must be made with reference to the total requirements of all the roads of a given district even though from rates thus made some roads would obtain more, and other roads less than was necessary for the fair return upon their respective properties. By establishing rates on the basis of the total requirements of all roads within the territory, the public would pay and the railroads as a whole would receive the total cost of transportation within the territory to which the rates applied, and at the same time the public would be protected against paying in rates an amount in excess of such cost.

That Congress recognized the necessity of establishing rates upon the basis of the combined requirements of groups of roads, is made clear by Section 15(a) of the Transportation Act which is as follows:

"In the exercise of its power to prescribe just and reasonable rates the Commission shall initiate, modify, establish or adjust such rates so that carriers as a whole (or as a whole in each of such rate groups or territories as the Commission may from time to time designate) will, under honest, efficient and economical management and reasonable expenditure for maintenance of way, structures and equipment, earn an aggregate, annual net railway operating income equal, as nearly as may be, to a fair return upon the aggregate value of the railroad property of such carriers held for and used in the service of transportation."

The principle of rate making thus prescribed for the railroads is identical with the principle which had been used for the utilities—the service-at-cost principle. In the case of the utilities, all the operating costs and maintenance charges, and the value of all property in the district to which the rates apply, are taken into account in the making of the rates. In the case of the railroads also, all the operating costs and maintenance charges, and the value of all the property in the district to which the rates apply, are taken into account. In the case of the utilities it is not material if some parts of the property earn less and other parts earn more than a fair return upon their value, provided that the total earnings of all the parts of the property produce for its owners a fair return upon its whole value. It is not material because there is a monopoly—a common ownership interest in all parts of the property—and a failure of one part to earn its fair return is offset by the fact that another part will earn more than its fair return. In the case of the railroads, likewise, if there were, as in the case of the utilities, a monopoly and thus a common ownership interest in all the railroad property in the district, it would not be material if some parts of the property earned less and other parts earned more than a fair return upon their value, provided that the total earnings of all parts of the property produced a fair return upon its total value.

In the case of the utilities a single ownership of the utility property within the district was necessary, because the fact of several separately-owned properties within a territory so limited as that usually served by a utility made necessary a duplication of facilities with a resultant excessive burden of cost upon the public not adequately offset by any benefits commonly ascribed to competition. In the case of the railroads, however, where the rate district is of

necessity much more extensive, and where there is a greater diversity in the operating conditions which surround different parts of the industry, there is a common belief that some competition can be preserved without costly duplication of facilities, and that under such circumstances competition will afford certain advantages to which the public is entitled. In the case of the railroads, therefore, provision is made for preserving such competition as may be expected to improve the quality and decrease the cost of service and thus be consistent with the fundamental purpose of the Transportation Act. But the fact that there is to be competition instead of monopoly means that there are to be separately-owned properties instead of a common ownership of all railroad property within the district. The existence of several separately-owned properties obviously renders it more difficult to apply the service at cost principle of rate making to the railroads than to the utilities. Where there is to be a diversity of ownership it is not sufficient that the total railroad income within the district shall be sufficient for a fair return upon the total value of the railroad property. It is necessary also that each separately-owned property, if efficiently operated, shall receive a fair return upon its value. Unless this shall be the fact, there will be some railroads which, because of insufficient income, will be incapable of giving adequate service, and there will be some owners who will be deprived of the fair return to which they are constitutionally entitled.

III

The provision for consolidations was the logical result of the rate-making method adopted by the Transportation Act. Rates are to be made for each rate district which shall produce a fair return on the aggregate value of all railroad property within the district, but without regard to the ownership of individual properties. Under this method of rate making the public is to pay transportation charges designed to be sufficient to provide adequate transportation in all parts of the territory. In return for such payment the public is obviously entitled to receive adequate service from property wherever located in the territory. The owners of the railroad property, considered as one group, having received income sufficient to cover the cost of furnishing adequate transportation service everywhere throughout the district, are under obligation to furnish such service for which the public has paid. The ownership of all of the property in the rate-making district must be distributed among different owners, therefore, so that the owners of property which receives more than the fair return under the established rates, shall have also an interest in the ownership of the parts of the property which receive less than such fair return.

The Interstate Commerce Commission, by the provisions of the Act, is to determine by its plan of consolidations what readjustments in the ownerships of the various properties are required to accomplish this purpose. The terms upon which these readjustments of ownership shall be made, however, are left for the determination of the owners of the various properties, subject to the approval of the Interstate Commerce Commission. It may be said that the public is not concerned with the terms in accordance with which these readjustments of ownership shall be brought about, but it is vitally concerned in their accomplishment on some basis, since only thus will the public be assured of the service for which it has paid.

The intent of the Transportation Act as to the predominant purpose of consolidations is shown by Section 5, which is as follows:

"(4) The Commission shall, as soon as practicable, prepare and adopt a plan for the consolidation of the railway properties of the continental United States into a limited number of systems. In the division of such railways into such systems under such plan, competition shall be preserved as fully as possible, and wherever practicable the existing routes and channels of trade and commerce shall be maintained. Subject to the foregoing requirements, the several systems shall be so arranged that the cost of transportation as between competitive systems and as related to the values of the properties through which the service is rendered shall be the same, so far as practicable, so that these systems can employ uniform rates in the movement of competitive traffic and under efficient management earn substantially the same rate of return upon the value of their respective railway properties."

The two sections of the Transportation Act quoted herein are the new legislation enacted by Congress for the purpose of re-establishing and maintaining the credit of the railroads so that they may provide adequate transportation service for the people of the United States. The first-quoted paragraph imposes upon the Interstate Commerce Commission the duty of establishing rates which, in accordance with the principle of service-at-cost, shall require the public to pay an amount neither more nor less than is sufficient for the needs of the railroads as a whole. The last-quoted paragraph imposes upon the Commission the duty of leadership towards action to be taken by the railroads themselves which shall create railroad systems of such uniform character that each system, if well managed and efficiently operated, will be able to derive from uniform rates an income which will re-establish and maintain its individual credit so that it can provide adequate transportation service to the people of the territory which it serves. It is thus apparent that the consolidation provisions of the Transportation Act are of fundamental importance, and that a failure to accomplish consolidations as indicated will make impossible the successful application of the service-at-cost method of rate making which is now prescribed for the railroads.

While it is clear that the immediate and primary purpose of the consolidation provisions of the Transportation Act is to terminate the separate ownership of railroad properties which by themselves will be incapable of securing from average rates an income adequate for their fair return, and because of this fact will be incapable of furnishing adequate service, yet it is clear also that consolidations will serve other purposes of equal if not greater importance.

There are roads which perform a considerable part of the country's transportation business which are average roads from an operating point of view, but which, with their present capitalization will, nevertheless, be roads of poor credit even though they receive an income sufficient for a fair return upon their respective properties. To establish the credit of such roads it is necessary that they not only receive the income to which they are entitled, but that their capitalization shall become properly related to the value of their properties, and that adjustments of capitalization shall be made so as to establish the sound and well-understood relationship between capital stock and obligations bearing fixed charges. Such changes and adjustments of capitalization are difficult or impossible under ordinary circumstances. In the process of consolidation, however, over-capitalization will be eliminated since the

Transportation Act requires that the total capitalization of a consolidated company shall not exceed the total rate-making value of the combined properties. Moreover, the act of consolidation will furnish the occasion for establishing a sound relationship between obligations and capital stock. This readjustment of capitalization is a more important factor in re-establishing railroad credit generally than is the factor of terminating the independent operation and ownership of roads which are unable to obtain adequate income from average rates, for it concerns roads which perform a larger part of the country's transportation business. A further effect of consolidations will be to bring about such unification and correlation of properties as will make possible a maximum of service with a minimum of facilities, and the realization of various economies in operation which are conceded to be possible under a more unified management and operation.

To provide a system of rate making which requires the public to pay charges sufficient to maintain the credit of the railroads as a whole, and to apply such a system of rate making to a transportation system, which, solely because of the way in which its ownership is divided, will not have in all of its parts the credit necessary for the full performance of the service which has been paid for—to a transportation system moreover, which is not capable of serving the public with the efficiency and economy which is possible—will eventually lead to such dissatisfaction with public regulation as to seriously endanger the continuance of private management. Adjustments in the rate structure and in ownership are both necessary in order that conditions may be created which will make possible effective regulation. Adjustments of such character and extent cannot be made overnight.

IV

To expect an immediate realization of all the benefits which the Transportation Act makes possible is to expect the impossible. Although the Interstate Commerce Commission, immediately upon the passage of the Transportation Act in March, 1920, undertook the task of establishing rates which should produce a fair return upon the value of railroad property in each of the several designated sections of the country, such fair return has not been realized. The unprecedented business depression, beginning in the closing months of 1920 and extending well into the year 1922, so reduced the volume of traffic that even the higher rates which were established failed to produce for the railroads as a whole an income large enough to cover the cost of the service they rendered. In fact there are but few individual roads for which the rates have proved sufficient.

Despite the fact that these rates have failed to produce the income intended and expected there has been vigorous complaint in some sections of the country that rates are too high to allow many important industries to prosper, and there is already a demand in some quarters that the rate-making provisions of the Transportation Act be repealed. It may well be pointed out that the repeal of these provisions would in no way remove or alter the necessity for a railroad income sufficient to cover the cost of service rendered by the railroads, including as a part of such cost a fair return upon the value of railroad property. Whether the railroads are owned and operated privately or are owned and operated by the Government, rates must be made which will

cover the cost of service if the railroads are to be self-sustaining. If the users of the service are not to be required to pay rates which will cover its cost, then the deficiency caused by inadequate rates must be supplied from some other source, since railroad service is no exception to the rule that the cost of production must be covered if production is to continue. The only source of railroad income other than rates is general taxation and it is inconceivable that railroad income can be derived from general taxation under conditions other than those of Government ownership.

It may well be admitted that there are inequalities and injustices in the present rates. It is doubtless true that some commodities are charged rates so high as to retard or prevent their movement with profit to the shippers; that other commodities could bear higher rates than those now imposed without seriously affecting their movement and without absorbing all of the profit arising from their production and sale. It will be conceded generally that many rate adjustments are necessary for the welfare of both the railroads and industry and that it is imperative that adjustments of individual rates be made from time to time so that rates upon different commodities are decreased or increased as shall be found to be necessary or possible in accordance with the principle that the necessities of industries are to control the rate levels. The fact that rate inequalities and injustices exist and must be corrected does not lead to the conclusion, however, that rates as a whole, when adjusted to the necessities of industry, cannot be made to support the cost of transportation under usual conditions of industrial prosperity; nor does it alter the fact that unless rates produce adequate railroad income, dependence must be placed upon general taxation, the inevitable result of which will be Government ownership and operation. The rate problem is a problem of administration; its solution does not require a change in the method of rate making now prescribed by law.

V

To the matter of consolidations also, the Interstate Commerce Commission, soon after the passage of the Transportation Act, turned its attention; the Commission has prepared and published a tentative grouping of the railroads of the country into a few large systems in accordance with the requirements of the Act. Hearings are now being held in different parts of the country by the Interstate Commerce Commission and by various other organizations with a view to obtaining all possible data which will assist in determining the plan finally to be adopted. The lines along which the final plan shall be developed are clearly indicated by the Act itself. Its intent is to create in the several rate districts railroad systems each of which will conform in large measure to the operating and financial characteristics of all the railroads of the district considered as a unit. There are a number of railroads already in each district, largely the results of consolidations or ownership relations established before the anti-trust laws became operative, which appear to fulfil every requirement of the consolidation provisions of the Transportation Act. These systems represent average operating conditions of the rate-making district in which they are located. Furthermore, these systems are so soundly capitalized as to have earned the confidence of the public. Obviously, such systems should be disturbed as little as possible in any plan of consolidations. The purposes of the Act will be served best by a plan of consolidations which leaves these systems

for the most part undisturbed and groups the remaining roads in the district into systems of similar operating advantages and financial strength.

The tables containing the operating and traffic statistics, in the following pages, show the characteristics of average systems in that part of the Eastern Rate District known as "Central Freight Association and Trunk Line" territory. They show the similarity of two of the existing systems to the average and they indicate the standard with which new systems must comply. Central Freight Association and Trunk Line territory is that part of the United States which may be described generally as bounded by the Hudson River on the East, the Mississippi River on the West, the Canadian border on the North, the Ohio River and the lines of the Norfolk & Western Railroad system on the South.

There are in this territory 48,563 miles of railroad. The railroads comprising this mileage, for the year 1916, carried 156,451,509,148 tons of freight one mile. This freight was handled at an average rate per ton per mile of $0.00625. The character of the tonnage is shown by the tables. These same roads also carried 12,681,573,217 passengers one mile. The average passenger rate per mile was $0.0189. The average annual railway operating income of these roads for the so-called "Test Period"—the three years ended June 30, 1917—was $1,299,686,525. This revenue was used or was available for the following purposes in proportions as indicated:

Used for all operating costs, excluding maintenance	45%
Used for maintenance	29%
Available for fixed charges, dividends and surplus	26%
Total	100%

In the year 1916 there were two railroad systems in this district, the New York Central and the Pennsylvania, which with their subsidiary companies carried 81,226,317,130 tons of freight one mile. That is to say, these two systems handled 51.9% of the total freight traffic of the district. They carried 8,285,972,584 passengers one mile, which is equal to 65.4% of the passenger traffic of the district. The average annual railway operating income of these two systems for the three years ended June 30, 1917, was $729,939,396, equal to 56% of the total of the district. The table on the next page shows the similarity of the tonnage of these roads to that of the combined roads of the district; the similarity of the rates for carrying both passenger and freight; the similarity in the density of traffic, and the similar use made of the railway operating income:

The similarity of the combined New York Central and the Pennsylvania systems to the average of the district is clear from this comparison. These two systems together, compared with the average, handled traffic of different kinds in almost the same proportions, at the same rates and with the same financial results. It is railroad systems of this character which carry out the purpose and intention of the Transportation Act.

In a tentative plan of railroad consolidations prepared by the writer and published by the Investment Bankers Association of America, in November, 1921, the roads in the Eastern District were grouped into four systems. The New York Central and the Pennsylvania were designated as two of these systems with but few additions or changes to their existing mileage. A large part of the remaining roads were grouped together to make up the other two sys-

OPERATING AND FINANCIAL STATISTICS

CLASSIFICATION OF TONNAGE—YEAR ENDED JUNE 30, 1916

	COMBINED ROADS, EASTERN DISTRICT	NEW YORK CENTRAL AND PENNSYLVANIA SYSTEMS
Products of		
Agriculture	6.9%	6.9%
Animals	1.8	1.9
Mines	60.1	58.7
Forests	4.5	5.2
Manufactures	18.8	20.2
Miscellaneous	3.9	3.2
L. C. L. Goods	4.0	3.9
Total	100.0	100.0

TRAFFIC DATA—YEAR ENDED JUNE 30, 1916

Ton miles per mile of road	3,222,169	3,429,786
Passenger miles per mile of road	261,181	349,618
Number of tons per train	683	697
Rate per ton mile	$0.00625	$0.00625
Rate per passenger mile	$0.0189	$0.0194

USE OF OPERATING REVENUE—"TEST PERIOD"

Per cent operating income used for all operating costs excluding maintenance	45.0	45.6
Per cent used for maintenance	29.0	29.6
Per cent available for fixed charges, dividends, and surplus	26.0	24.8
Total	100.0	100.0

tems—the Delaware & Hudson, the Erie, and the Delaware, Lackawanna & Western forming the basis of one; and the Baltimore & Ohio, the Reading, and the Lehigh Valley, forming the basis of the other. The two systems thus formed contained roads which carried 68,402,068,084 tons one mile, or 43.7% of the ton miles of the whole district. The four systems thus carried 95.6% of the entire freight of the district. A combination of the statistics of the various roads making up these two new systems shows that they would be very close to the average of the district as well as to the average of the New York Central and Pennsylvania, or to each of these roads considered separately.

For the purpose of comparison the average figures for the district and the figures for each one of these four systems or groups are set forth in the table on the following page.

It is apparent that in essential respects the four systems are strikingly similar to each other and that all four are strikingly similar to the average of all roads in the territory. This similarity extends to the kinds of business handled, to the density of traffic, to the receipts per ton and per passenger per

mile, to the train load, and to the uses made of the operating revenue. Only in the matter of density of passenger traffic is there any substantial variation from the average, a variation explained by the fact that the two proposed new systems are to be composed largely of roads which in their past operation have had no opportunity or occasion to develop a through passenger business.

In the Southern Rate District—that is, the territory south of the Potomac and Ohio Rivers and east of the Mississippi—the situation is similar. The existing Southern Railway and Atlantic Coast Line-Louisville & Nashville systems conform closely to the average of the district. Likewise, in the territory west of the Mississippi River roads like the Atchison, Topeka & Santa Fe, and

OPERATING AND FINANCIAL STATISTICS

CLASSIFICATION OF TONNAGE—YEAR ENDED JUNE 30, 1916

	COMBINED ROADS, EASTERN DISTRICT	NEW YORK CENTRAL SYSTEM	PENNSYLVANIA SYSTEM	LEHIGH VALLEY—BALTIMORE AND OHIO—READING GROUP	DELAWARE AND HUDSON—ERIE—LACKAWANNA GROUP
Products of					
Agriculture	6.9%	9.0%	5.6%	6.3%	8.7%
Animals	1.8	2.4	1.5	1.4	2.1
Mines	60.1	56.6	60.2	63.3	59.5
Forests	4.5	4.8	5.3	4.1	3.7
Manufactures	18.8	23.5	18.3	16.0	19.3
Miscellaneous	3.9	2.2	3.8	3.3	3.1
L. C. L. Goods	4.0	1.5	5.3	5.6	3.6
Total	100.0	100.0	100.0	100.0	100.0

TRAFFIC DATA—YEAR ENDED JUNE 30, 1916

Ton miles per mile of road	3,222,169	2,980,738	3,916,557	3,630,145	2,896,200
Passenger miles per mile of road	261,181	297,238	406,739	181,956	171,869
Number of tons per train	683	715	682	719	656
Rate per ton mile	$0.00625	$0.00610	$0.00638	$0.00602	$0.00613
Rate per passenger mile	$0.0189	$0.0195	$0.0193	$0.0187	$0.0174

USE OF OPERATING REVENUE—"TEST PERIOD"

Per cent operating income used for all expenses excluding maintenance	45.0	44.8	46.2	44.0	44.5
Per cent used for maintenance	29.0	27.2	31.6	28.4	28.0
Per cent available for fixed charges, dividends, and surplus	26.0	28.0	22.2	27.6	27.5
Total	100.0	100.0	100.0	100.0	100.0

the group made up of the Northern Pacific, Great Northern, and Chicago, Burlington & Quincy are systems which show a close similarity to the average of all roads in the district. In both of these districts, as in the Eastern District, there are thus seen to be systems already in existence which so well fulfil the purposes for which consolidations are to be undertaken that they should be preserved, and it follows that the remaining roads should be treated as additions to these systems, or grouped so as to form other systems of similar character.

The striking similarity between the averages made from the combined statistics of the New York Central and the Pennsylvania and from those of all roads in the district, as shown in the preceding tables, need not be a matter of surprise; in fact, it would be a surprise if the figures were not substantially alike. This similarity is the logical result of the way the two systems have been built up so that today they extend from one end to the other of the rate district in which they are located and thus share in the varied business of all of its different parts. They cover the territory so completely that they experience the varied operating conditions, both favorable and unfavorable, which are bound to exist in a territory so widely extended. They are examples of the kind of systems which were being formed before the law made further consolidations practically impossible.

VI

The creation of consolidated railroad systems now authorized by the Transportation Act is nothing more than a resumption of the process of building up and uniting the railroads of the country which have or which can develop traffic interests in common—a process which was carried on voluntarily by railroad owners themselves so long as it was permitted and out of which have developed the strongest and best railroad systems of the country. The Transportation Act does not establish a new and untried policy in respect to consolidations—it merely makes possible a continuation of an old policy and a further development along the clearly defined lines which experience has shown to be of advantage both to the railroads and to the public.

If further consolidations are not undertaken the railroad problem of the country will not be solved even though rate adjustments are so made that the total income which they produce is sufficient to support the railroads of the country as a whole. Unless a general plan of consolidation becomes effective there will continue to be railroads, which are relied upon to perform an important even though minor part of the country's transportation, which will be unable to secure income sufficient to enable them to provide the service required of them. There will continue also to be railroads which are relied upon to perform a greater and a substantial part of the country's business which, though securing adequate income, will nevertheless be roads of weak credit and therefore of poor performance because of their unsound capitalization. There will continue to be the interminable controversies over the division of thousands of individual joint rates between hundreds of individual roads. There will continue to be attempts to limit the earnings of the more successful roads to a fair return on the value of their properties, and some provision will be considered necessary for the "recapture" of a part at least of the income which exceeds such an amount—

a procedure which raises administrative difficulties of a serious character. Moreover, the continued existence of roads which, through past financial mismanagement or otherwise, have earned the hostility of the public will make it more difficult to secure the adoption of a policy of regulation without unnecessary restrictions upon management and operation. Conditions arising from the mistakes of past managements of such roads will continue to be made use of to create the belief that they are typical of conditions which surround railroads generally, and the lack of confidence thus created in railroad managements will result in greater restriction than otherwise would be imposed. So long as roads of this character continue to occupy a prominent place in the field of transportation, the emphasis given to their mistakes will serve to detract attention from a consideration of measures necessary to remedy conditions which are a handicap to successful operation and management—conditions which are beyond the control of managements to correct. Thus, if consolidations are not undertaken many of the difficulties which have surrounded the railroads in the past will persist.

On the other hand, if consolidations shall be undertaken as is intended by the Transportation Act, many of these difficulties will disappear. There will be no roads incapable, under efficient management, of securing adequate income from rates which produce an amount sufficient for the total requirements of all roads; there will be no roads incapacitated from furnishing adequate service because of poor credit due to unsound capitalization; the problem of the division of joint rates will be reduced to comparatively simple terms because of the small number of the roads concerned; the provision of the law for the recapture of the so-called excess earnings will be largely unnecessary; the ill repute of individual roads, caused by their past mismanagement, will be mostly forgotten as they become parts of new systems and capitalization is made consistent with property values. Moreover, such consolidations as are intended by the Transportation Act will inevitably result in a decreased duplication of facilities and in various economies in operation, while the whole practice of public regulation will be simplified, since it will apply to roads which are few in number and which are largely uniform in character. Under such conditions regulatory measures, existing or proposed, will be considered with relation to their effect upon roads which have been so managed as to have justified and to have secured a large measure of public confidence or with relation to new systems which give promise of stability and success.

To make it possible to satisfactorily apply the service-at-cost principle of rate making to the railroads of the country, to readjust capitalization when necessary in conformity with sound standards of credit so that all roads serving the public will be roads of financial strength, to create conditions under which the traffic of the country can be handled with the greatest efficiency and economy, to secure for the public the benefits of competition without its burdens—these are the factors involved in the matter of railroad consolidations.

In the light of all that is involved it is apparent that no single consolidation is a problem by itself. Each consolidation must be considered in relation to the whole problem of so reorganizing the transportation system of the country that it shall consist of none but strong units each capable of attracting

to itself the capital it needs and each capable of furnishing the service to which its patrons are entitled. Every consolidation is a part of the problem of creating a transportation system of such character that a continuation of private management will be justified and will be sanctioned.

THE STATISTICAL CONTROL OF BUSINESS ACTIVITIES

By M. C. RORTY

THE practical statistician sees in statistical control a method of improving business administration that has very definite possibilities and equally definite limitations. On the other hand, the business executive, who is unskilled in statistics, is very apt either to condemn statistical control "in toto," or to expect far too much from it.

These differences in attitude arise very largely from the failure to make a clear distinction between the unorganized, relatively aimless statistics of the average business, and those organized and purposeful statistics which are required for genuine statistical control.

In any well managed business undertaking, and particularly in one of large scale, there is, and must be, consciously or unconsciously, a very great dependence upon statistics. Books of account, payrolls, stock records, sales records, production schedules, cost records, purchasing schedules, and innumerable other entries and summaries of current and prospective operations, are nothing more or less than the statistics of the business. In some special enterprises, notably those concerned with the various forms of insurance, and to a considerable extent in banking, the statistical element predominates. Furthermore, there is rarely even a minor executive in any business who does not, knowingly or otherwise, base his decisions very largely upon the statistics of his operations.

From a business standpoint, it is, therefore, impossible to adopt a narrow definition of statistics. A practical separation must, of course, be made between statistics and accounts, and, in fact, it is very necessary that no attempt be made to burden the regular accounting forces with the changing details of statistical analyses. The two classes of work are radically different. In general, the accounts will serve their full purpose if they accurately reveal the financial status of the business and the financial results of current operations, and in addition locate general responsibility for any marked variations from normal performance. But beyond this point it is not profitable, even where it is possible, to carry the rigidity of the balance sheet and the double entry. Cost analyses, operating reports, projections of future financial and operating results, and many other statements and summaries, all require flexibility of handling and must be treated from a statistical rather than an accounting standpoint. Furthermore, the accounts themselves are the materials from which many statistical studies are derived—so that with the special field of the accounts once clearly defined, it is not too much to say that all pertinent numerical facts, and many that are not strictly numerical, whether within or without the business, whether relating to the past, the present, or the future, fall within the scope of business statistics.

It is this very pervasiveness of the statistical element in modern business that is most confusing to the executive who is seeking to avail himself of improved statistical technique in the handling of his affairs. Yet it is not impossible to establish a working distinction between business statistics in bulk and those special statistics and statistical studies which form the elements of statistical control. This distinction is, however, largely based on the attitude of the executive.

It is possible to have reams of statistical reports and hundreds of charts and diagrams without securing even the beginnings of statistical control. If the statistics grow out of the absolute needs of the business and are looked upon as necessary evils rather than as positive and constructive factors, statistical control does not exist. Furthermore, even the most competent of statisticians will have little success in establishing a basis for statistical control if he is not in working contact with a responsible executive who will make his studies effective.

Genuine statistical control must, therefore, begin with the desire of the executive to base his decisions, so far as practicable, on a careful analysis of the facts, both external and internal, which relate to his business. It is the function of the statistician to assemble the facts, all the facts, and nothing but the facts; to analyze these facts in such manner as to indicate obvious courses of action; and, where obvious courses of action cannot be indicated, to determine as accurately as possible the probable range of results under different plans of procedure. But here the work of the statistician ends. Facts without action are worse than useless—and only the executive can translate facts into constructive performance.

Granting, however, that this prerequisite for statistical control exists, there still remain questions of cost, of statistical personnel, and of specific methods to be employed.

Contrary to general belief, the element of cost is a relatively minor one in any organization of substantial size. A single, well qualified statistician with one or two clerks, when working under the right executive, can soon demonstrate in a very practical way the profit to be derived from a further expansion of statistical activities. Furthermore, there are few large scale organizations in which a critical study of existing expenditures for unorganized bulk statistics and a proper reorganization of existing statistical work will not effect economies sufficient to pay for a centralized statistical office.

It is, nevertheless, to the interest of both the statistician and the executive to establish statistical control gradually and with a careful testing of each step. On this basis each addition to the statistical organization and each element of statistical work will constitute a proven source of profit, rather than an item of expense. On the other hand, if an attempt is made to create a large statistical organization over night, without well established relations with the executives, there is great danger of repeating the experience recently brought to the writer's attention, where a very competent statistical force gave repeated warnings of dangers ahead and was then suddenly disbanded, as a measure of economy, when the disregard of its warnings led to disaster.

The Statistical Organization

With a policy of gradual development once adopted and with immediate out-of-pocket expense thereby mini-

mized, the next problem is that of choosing the chief statistician and establishing his relations to the balance of the organization. As previously indicated, the statistician must report directly to an executive who is in thorough sympathy with the idea of statistical control and is capable of valuing the statistician's work and translating it into terms of definite proposals for action. It is also desirable for this executive to be in position to put into effect, in the routine statistical work of the various units of the organization, the suggestions for improvements that will naturally originate with the central statistical office. Very frequently the best results are obtained when the chief statistician reports to the chief accounting or financial officer of the organization—but so much depends upon the nature of the organization and the personal qualifications of the executive who attempts the initial development of statistical control that no general rules can be laid down.

In selecting the chief statistician, there are two opposite possibilities. In either case the ultimate aim must be to combine, in this staff specialist, a broad, practical knowledge of the business with skill in statistical technique. This aim may be realized, in one way, by choosing a man already familiar with the business, who has an analytical mind and is capable of acquiring a knowledge of statistical methods sufficient at least to permit him to direct the work of statistical specialists of junior rank. The alternative procedure is to select a man of the proper general caliber, already skilled in statistics, and to give him an opportunity to familiarize himself with the details of the business, while at the same time he gradually develops the machinery of statistical control. A compromise plan is to make a temporary assignment of a man skilled in the business, with the future chief statistician working "pro tem" as his assistant. Any one of these plans will give satisfactory results if it is kept clearly in mind that the qualities required in the chief statistician, in order of importance, are good judgment, analytical ability, knowledge of the business, and statistical skill.

After the selection of the chief statistician and the assignment of the central statistical office to a definite position in the business, further developments in statistical organization will depend very largely upon the gradual education of departmental and other executives in the effective use of statistical studies.

The principle to be followed is that of centralization of statistical control in matters of methods and general policy, combined with decentralization in matters lying within the field of individual departments or organization units. Ordinarily it will be found that there are existing employees in each important unit of the organization who are doing work of a statistical or semi-statistical nature and are relied upon by the executives of such units for much of the information upon which their day-by-day decisions are based. Such employees need not be designated as statisticians, but they should, nevertheless, be brought at a very early date into direct contact and cooperative relations with the chief statistician. One of the best devices for this purpose is that of an informal monthly luncheon at which the various employees doing statistical work may discuss their problems and interchange the results of current statistical studies.

In line with this principle of decentralization of statistical work, it is especially important to keep in mind the

close relation which, as previously indicated, must exist between statistics and executive responsibility. The chief statistician must initially make many studies which, in a sense, will be critical of existing performance. His success will not be measured, however, by the immediate value of such criticisms, but by his ability to establish within the various units of the organization such methods of statistical control as may tend to obviate the need for criticism. The chief statistician must feel, therefore, that he has gained rather than lost, whenever a departmental or unit executive expresses a desire to have any portion of the detailed statistical work transferred to his immediate supervision.

With a general plan adopted for the development of the statistical organization, many of the details of the actual statistical work and of the assignment of such work within the organization will settle themselves on the basis of day-to-day experience. There are, however, certain general classes of work, as well as some specific studies, that merit special discussion.

General Business Forecasts

Probably no requirement is more definitely imposed upon the modern business statistician than that of ability to analyze business operations in relation to the business cycle. Such analyses have a fundamental bearing on the operating budget, and are also of primary importance in connection with the determination of financial, purchasing, and sales policies, and in the handling of labor and personnel matters.

For the purpose of these studies it is necessary for the statistician to familiarize himself with recent developments in the theory of the business cycle and to have at hand current statistics both of general business and of the particular business in which he is interested.

As sources of statistics, there are now available at small cost the "Survey of Current Business" published monthly by the Department of Commerce, together with weekly summaries of the same figures issued by the Chamber of Commerce of the United States. Further valuable figures are supplied in the publications of the Federal Reserve Board and of the individual Federal Reserve Banks, in which, as well as in the monthly letters of many of the larger commercial banks, trust companies and investment houses, much valuable interpretation is combined with the basic statistics. All of these sources of information should, of course, be combined with subscriptions to appropriate trade and financial publications.

From the standpoint of economic theory, reference should be made not only to standard text-books, but even more particularly to recent issues of the various statistical and economic quarterlies in which much attention has been given to the business cycle and business forecasts. Special mention should also be made of the Harvard Economic Service[1] which, in its quarterly reviews and weekly letters, combines economic theory and basic statistics with analyses and forecasts. A further very useful publication is the report[2] on unemployment and the business cycle recently prepared for the President's Committee on Unemployment.

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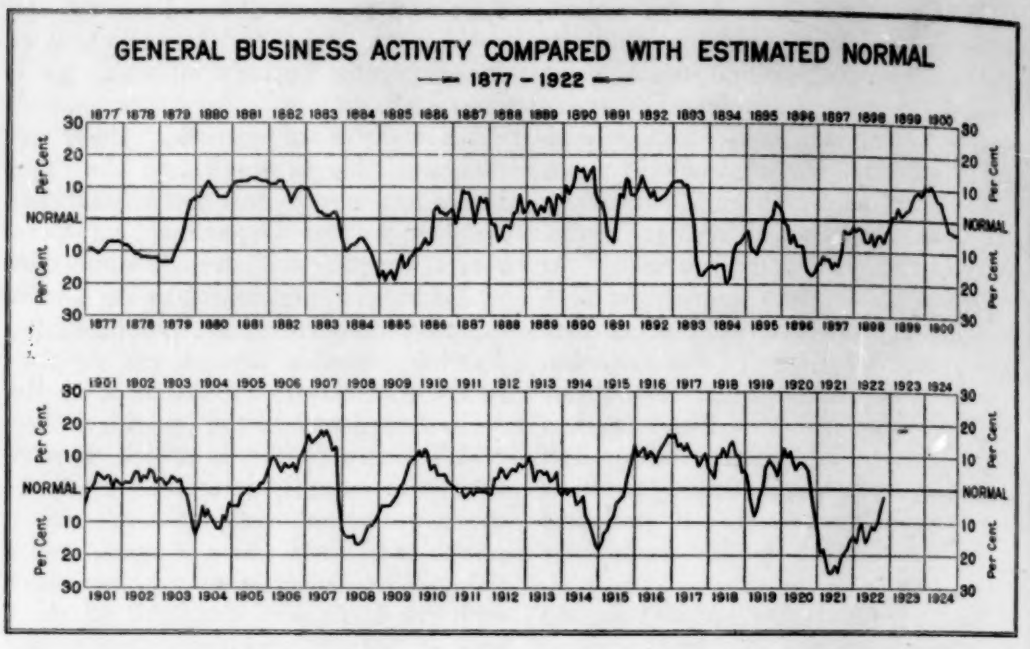
[1] Published by the Harvard Committee on Economic Research, Cambridge, Massachusetts.

[2] *Unemployment and the Business Cycle,* National Bureau of Economic Research, Incorporated, 474 West 24th Street, New York City.



With this wealth of material at hand, there is danger that both the executive and the statistician may be tempted into an unnecessary elaboration of analysis. There is also the danger of assuming that the business cycle moves according to fixed laws with the regularity of a pendulum. Both of these mistakes must be guarded against. Each business cycle differs in intensity and duration, and to a considerable extent in causes, from every other. There is, furthermore, no complete substitute for that instinctive knowledge, or "feel," of a business that comes in time to the experienced executive, and this knowledge, in combination with a relatively simple statistical analysis, will produce results that cannot be secured from the most elaborate sets of figures when the practical touch is lacking.

In the vast majority of businesses very useful forecasts of future activity may be made by the simple and statistically crude method of plotting a curve of past performance for as many years as possible, in comparison with a curve representing general business activity, and then carrying both curves forward, almost by free-hand drafting, keeping in mind the probable development of the current business cycle and the relations between the two curves that have obtained in previous cycles. In making this analysis and forecast it is important to deal in physical quantities of production, sales, and so forth, rather than in dollars of value, in order to avoid confusing real changes with those due to mere price fluctuations. It is, of course, also necessary to have at hand a trustworthy chart of general business activity covering a long period, which can be kept up to date by monthly additions.

At this point a special difficulty comes in. Existing long term charts of general business activity in relation to "normal" have a limited circulation through private and commercialized agencies, and many of the best qualified statisticians are so fully aware of the

necessary errors and limitations in such charts that they have hesitated to publish the charts which they themselves regularly use. This hesitation is, however, not wholly justified, and steps should be taken at an early date to secure the regular publication of some such chart in a periodical of general circulation.

Pending such general publication, our immediate purposes may be served by the use of the chart [3] on the opposite page, which represents one of the best of such general indices and has stood the test of practical use for a number of years. This chart, it should be noted, is a composite of several of the best long term statistical series which have been specially selected because of the conformity of their movements with what seem to be the basic changes in production and distribution. However, it includes no measures of agricultural activity or retail trade, except as such items are indirectly reflected in freight movements and bank clearings, and it includes only a very limited list of non-

[3] Credit for this chart is to be given to the Statistical Division of the American Telephone and Telegraph Company.

COMPOSITE INDEX OF GENERAL BUSINESS ACTIVITY

(Figures indicate percentage deviations from normal)

	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892
January	− 9	− 8	−13	+ 7	+12	+11	+ 9	−10	−16*	−10	− 2	− 2	+ 6	+11	+ 5	+ 9*
February	− 9	− 9	−13	+ 9	+12	+11	+ 7	− 9	−19	− 8	+ 3	− 2	+ 5	+ 8	+ 1	+14
March	−10	−10	−13	+11	+12	+12	+ 4	− 8	−17	− 6	+ 9	− 7	+ 3	+10	− 5	+11
April	−11	−11	−13	+12	+12	+12	+ 2	− 8	−16	− 8	+ 8	− 6	+ 1	+12	− 6	+ 9
May	−10	−11	−11	+10	+12	+10	+ 2	− 7	−19	− 7	+ 8	− 2	+ 4	+17	− 7	+ 7
June	− 8	−12	− 9	+ 8	+13	+ 8	+ 1	− 6	−14	+ 3	+ 6	− 2	+ 2	+15	− 0	+ 9
July	− 7	−12	− 7	+ 7	+13	+ 5	+ 1	− 6	−11	+ 4	− 2	− 3	+ 7	+16	+ 8	+ 6
August	− 7	−12	− 3	+ 7	+13	+ 7	+ 1	− 8	−15	+ 2	+ 2	+ 2	+ 6	+12	+ 7	+ 6
September	− 7	−12	+ 2	+ 7	+12	+ 9	+ 2	−10	−14	+ 2	+ 7	+ 2	+ 1	+15	+13	+ 7
October	− 7	−12	+ 6	+ 7	+12	+10	+ 2	−12	−12	+ 1	+ 5	+ 8	+ 8	+17	+12	+ 8
November	− 7	−12	+ 6	+ 9	+12	+10	− 2	−15	−11	+ 2	+ 7	+ 2	+ 7	+ 8	+ 7	+10
December	− 8	−13	+ 7	+11	+11	+ 9	− 6	−18	− 9	+ 3	+ 1	+ 3	+ 5	+ 5	+ 7	+12

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
January	+12	−14	− 3	− 1	−13	− 3	+ 1	+10	− 1	+ 2	+ 3*	−10	− 5	+10	+17	−14
February	+12	−16	− 9	− 2	−11	− 2	+ 1	+11	− 0	+ 2	+ 1	− 5	− 5	+ 9	+14	−15
March	+12	−14	−10	− 7	−12	− 3	+ 4	+10	+ 2	+ 2	+ 2	− 8	− 2	+ 7	+15	−15
April	+11	−14	−11	− 5	−12	− 7	+ 1	+ 8	+ 5	+ 5	+ 4	− 6	− 1	+ 5	+16	−14
May	+11	−14	− 8	− 8	−15	− 7	+ 2	+ 6	+ 4	+ 5	+ 3	− 8	− 0	+ 8	+18	−17
June	+ 5	−20	− 6	− 8	−13	− 4	+ 3	+ 6	+ 3	+ 2	+ 2	−10	− 0	+ 7	+16	−17
July	− 2	−18	− 1	− 8	−14	− 8	+ 3	+ 3	+ 4	+ 4	+ 3	−12	− 1	+ 7	+18	−16
August	−13	−10	− 0	−14	−10	− 5	+ 6	+ 0	+ 4	+ 3	− 1	−12	− 0	+ 8	+16	−13
September	−17	− 7	+ 1	−16	− 3	− 5	+ 8	− 3	+ 0	+ 6	− 2	− 8	+ 2	+ 5	+12	−11
October	−17	− 7	+ 6	−17	− 4	− 7	+ 9	− 3	+ 3	+ 5	− 6	− 9	+ 2	+10	+13	−11
November	−16	− 6	+ 4	−16	− 4	− 4	+ 8	− 4	+ 2	+ 2	−11	− 4	+ 4	+11	− 4	− 9
December	−15	− 4	+ 3	−13	− 2	− 2	+11	− 4	+ 1	+ 3	−14	− 5	+ 7	+13	−12	− 8

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
January	− 5*	+12	+ 0	− 2	+10*	− 0	−16	+11	+17	+ 4	+ 4*	+13	−19*	−16
February	− 5	+10	− 1	+ 3	+ 8	− 2	−13	+12	+13	+ 3	− 3	+10	−18	−11
March	− 5	+12	+ 0	+ 3	+ 3	− 0	−12	+13	+14	+10	− 8	+12	−22	−10
April	− 5	+11	− 3	+ 6	+ 5	− 1	− 9	+ 9	+12	+10	− 6	+ 9	−25	−16*
May	− 3	+ 6	− 2	+ 5	+ 5	− 5	− 8	+12	+14	+13	− 2	+ 6	−25	−14
June	− 2	+ 7	− 1	+ 3	+ 4	− 4	− 4	+11	+12	+10	+ 0	+ 8	−23	−11
July	+ 1	+ 4	− 2	+ 5	+ 5	− 2	− 3	+ 8	+10	+14	+ 7	+ 8	−25	−12
August	+ 2	+ 4	− 1	+ 6	+ 2	− 8	− 2	+12	+10	+15	+ 9	+ 7	−21	−10
September	+ 5	+ 4	− 1	+ 5	+ 3	−10	+ 2	+13	+ 7	+11	+ 8	+ 5	−19	− 6
October	+ 8	+ 4	− 1	+ 8	+ 5	−13	+ 5	+15	+ 9	+10	+ 7	− 1	−18	− 2
November	+ 9	+ 2	− 1	+ 7	− 1	−17	+ 9	+17	+11	+ 5	+ 4	− 6	−15	....
December	+10	+ 1	− 2	+ 7	− 2	−18	+14	+16	+ 6	+ 6	+ 8	−11	−14	....

*Denotes months in which composition of curve changes.

agricultural raw materials. It is, therefore, primarily a measure of manufacturing activity and the physical movement of commodities. Nevertheless, with all these limitations, it represents, perhaps, as serviceable an approach as can be made to a single "all purpose" business index.

For the convenience of those who may wish to redraw the preceding chart in comparison with figures from their own businesses, the table on the preceding page is submitted.

In computing the index numbers in that table there have been successive additions of new series, accompanied by an elimination of a smaller number of the older and less satisfactory series. The reliability of the curve is, therefore, somewhat greater in recent than in earlier years. Since April, 1922, "bank clearings" and "debits to individual accounts" have been dropped, owing to the difficulty experienced in adjusting for price changes, and the index is now based wholly on items representing physical quantities. These items, with the relative weights assigned on a scale of 100, are as follows: pig iron production (wt. 20), unfilled orders U. S. Steel Corporation (wt. 10), freight car demand (wt. 10), car loadings (wt. 5), net freight ton miles (wt. 5), coal production (wt. 5), cotton consumption (wt. 10), activity wool machinery (wt. 10), paper production (wt. 10), lumber production (wt. 5), leather production (wt. 5), power production (wt. 5).

All of the preceding details of charts and index numbers are of direct interest to the statistician, rather than to the executive, for whom this article is primarily written. However, since the information is not otherwise generally available, it is necessary that it be supplied here in order that those who desire may make the simple graphical comparisons between their own and general business activity which have been recommended as the first steps in the development of statistical control. With these first steps taken, the further development of business forecasts for any organization may indicate profitable opportunity for many refinements in statistical technique. Corrections for seasonal variations and long-term trends, and for the tendency for changes in any particular business to occur before or after changes in general business, are especially important. Some business activities move with pig iron production, new building, and so forth, rather than with general business. Others even tend to increase rather than decrease during periods of general business depression. Certain businesses are concerned mainly with domestic conditions, while others are vitally affected by the status of foreign trade. Here, again, there is a chance for team-work between the executive and the statistician in selecting, on the basis of practical knowledge, those outside activities with which a particular business is most intimately affiliated.

Market and Price Analyses

Closely related to forecasts of the activity of the business as a whole are those special studies which deal with marketing possibilities and probable price trends. Many of the charts and indices that have previously been mentioned will have a direct bearing in this connection. They must, however, be supplemented by added analyses of a sort to tax the ingenuity and judgment of both statistician and executive.

One of the difficult problems in market analysis is that of determining whether or not a given firm is maintaining its standing in relation to competitors. In some cases there are public

or trade association statistics which give sales or output for all, or a large percentage of, the concerns in a given line, but in the majority of instances it is necessary to undertake special investigations. These investigations will, of course, vary in type with the nature of the business. The fundamental principle is, however, almost always that of determining, for different states or other convenient smaller areas, the ratio of total competing business to the business of the investigating concern. If, for example, the product is tooth paste, even very scattered inquiries, made by salesmen of druggists and other retailers, will soon establish such ratios with a fair degree of accuracy. For other products or services it may be necessary to make inquiries through other channels of distribution, but persistent work, supplemented by an intelligent weighting of the returns, will furnish the required information in almost every instance.

With the preceding local ratios once determined, it is a simple matter to compute, from the known sales of the investigating concern, what the approximate total sales are in each area. Such rough totals may next be compared with population, income figures, property values, banking resources, public expenditures, percentages of children of school age attending high school, and other general indices, to determine to which of such factors, or to what composite of them, the natural demand is most closely related. The finished studies then become a guide to the formulation of sales and advertising policies.

Price studies and forecasts are of particular importance to concerns that must carry large inventories, or that regularly manufacture in large quantities for stock. The basic principle which underlies such studies is that of the tendency toward a long-term continuity in price relations, subject only to those gradual drifts which arise out of the exhaustion of raw materials and, occasionally, out of changes in the relative cost of skilled and unskilled labor. This tendency may, of course, be obscured or interrupted by changes in processes, by new tariff legislation, by the development of important substitute commodities, and so forth. Certain post-war effects may be of long duration, as in the case of copper prices. Radical increases in supply, as in the case of plantation rubber, may also break the line of continuity for special commodities. But with allowance made for these special cases and special factors, it is still possible to draw normal price curves, properly related to the general price level, for the great majority of all common articles of commerce.

With such normal price lines once drawn, the price study next concerns itself with seeking the explanation for past variations from "normal," in known conditions as to stocks on hand, production, demand, and so forth. The final operation, of course, is that of projecting the price trend into the future. Here, however, there is need for a very earnest word of caution. There are few, if any, millionaire statisticians, and from this it might be inferred that even the best of statisticians have not reduced price forecasts to an exact science. For this reason, those who have made the most use of such studies[4] are inclined to limit their operations to building up full inventories when prices swing below normal, and reducing such inventories to the

[4] See in particular "Management and the Business Cycle," by Henry S. Dennison, *Journal of the American Statistical Association*, March, 1922.

lowest safe working limits when prices swing above normal. When so applied, without any attempt to make speculative purchases, systematic price analyses may result in continuous small percentages of added profit, which in time may accumulate to very substantial totals.

The One to Five Year Budget

The preceding discussion of estimates and analyses which are based upon a knowledge of the business cycle and business trends, has a direct bearing upon what is perhaps the most important of all statistical operations—the preparation of the budget.

As ordinarily contemplated, the business budget is a projection of operations and financial results for the ensuing fiscal year. But this is much too narrow a view of the position of the budget in any effective plan for statistical control. An effective budget policy in any business of large scale requires that estimates be made in full detail for one year and in substantially full detail for the succeeding year. Beyond this initial two-year period there should ordinarily be more general estimates for three additional years.

All of these estimates should be revised and extended at appropriate annual intervals, and monthly comparisons should be made between actual results and the budget figures for all important items. Such monthly comparisons should also carry explanations of important variations from the original estimates. In case these variations accumulate to a degree that impairs the usefulness of the budget in the control of operations, there should be no hesitation in revising the estimates at a mid-year period, and such revision will be especially necessary in the event of any sudden and unexpected change in business conditions. However, under ordinary circumstances, it is a better procedure to maintain the original estimates as the basis for comparisons throughout the year, and to supplement them by means of departmental and other estimates indicating results actually expected during the balance of the year. As so set up, the budget will show, for each important item and in totals, the original estimates, the actual results to date, and the expected results during each of the remaining months of the year. For most effective use, these figures should be given in cumulative form, as well as in detail by months.

In the actual compilation of the budget, and in the preparation of monthly statements, the chief accounting officer of the organization must necessarily assume primary responsibility. Nevertheless there can be no more serious mistake than to assume that the budget should be handled as a mere matter of accounting detail. The purpose of the budget is to increase profits and reduce losses. It can only do this if it assists the whole organization in maintaining a uniform company front. Production, sales, and purchases must be in accord. Prices must not get out of line with costs. Profits, new financing, and new construction must be in balance. Caution and courage must go hand in hand with foresight in the whole program.

To secure these results, each department and each important unit in the organization must have an active part in the preliminary conferences and discussions—and back of all must be a careful setting forth of all the facts and trends that may contribute to a sound final decision. It is particularly important to have a thorough statistical check on all items into which an element of personal bias may enter. Only when these steps have been taken and when

each responsible executive knows in general terms not only what he is to do, but why, is it possible to reduce the budget to final form.

Personnel and Wage Studies

The preceding features of statistical control all relate to financial and physical elements—but it was a wise business man who summed up his working philosophy by saying "Men—not things." Statistics by themselves may be the coldest and least human items in business, yet the results of genuine statistical control may be greatest on the human side.

A very genial and human old attorney used to say that when he could do a good deed, and at the same time make a profit, all his functions moved in harmony. This point of view applies directly to the establishment of sound personnel policies. There is nothing which the average employee more directly or properly resents than a philanthropic or paternalistic attitude in matters affecting his wages and working conditions. What is needed is a very matter-of-fact assumption that the employer is offering good wages and good working conditions because he believes that it will pay him to do so.

Here the special necessity for statistical control comes in. It is probably safe to say that there is no business organization that is capable of introducing real statistical control, which cannot at the same time secure the lowest cost per unit of output, by paying distinctly more than a market wage. A relatively small wage differential, combined with good general working conditions, will soon attract a group of employees who have the instincts of workmanship and cooperation. But this is only the beginning. Such selected employees will respond very quickly to good leadership and good management, but they may do even worse and show more resentment than a miscellaneous group, if management and leadership are poor. The potentialities will be there, but they can be realized only through skilled and intelligently directed administration, in which statistical control must play a large part.

Back of these immediate and constructive uses of statistical control in wage and personnel matters lies an even larger protective function. No plans for the securing of high productivity through the establishment of a proper working morale can be successful unless they represent a firmly established policy. Not only must each change be introduced gradually, but it must also be made secure through continuing statistical evidence; otherwise temporary and wasteful attempts at economy may destroy in a few days the gains that have been made in months or years. Here, again, as in the development of the statistical organization itself, is it better to have slow and certain progress, rather than that which is rapid and uncertain.

When it comes to the details of statistical studies bearing on personnel and wage problems, the range is so wide that it is hardly possible to do more than list a few of the more important angles of approach.

Critical examination must be given, in the beginning, to cost accounting systems. If these involve rigid apportionments of overhead expense and lack statistical flexibility, they may seriously obscure the results obtained from efforts to secure increased productivity through wage increases and improved working morale. Here it may be permissible to digress for a moment to quote a practical experience which touches upon another angle of cost

analyses. A little over a year ago a consultation was held regarding the affairs of a small enterprise which was barely making both ends meet. On the usual basis of figuring costs it appeared that the product, after allowing bare interest on the investment, was costing, say, $85 per unit. The selling price was $100 and selling costs were $15. On this basis the president of the concern, who had managed the details of the business very efficiently, could see little chance of any real future for the enterprise. However, when the figures were carefully analyzed it appeared that the added direct production cost per added unit of output was only $45 and that there was every reason to believe that new business could be secured up to any reasonable amount without exceeding the existing sales cost of $15 per unit, thus leaving a margin of profit of $40 on each sale made beyond those covered by the existing schedule. The president was not wholly convinced of the soundness of this reasoning, but finally agreed to continue his previous minimum expenditures for sales promotion and to add to this amount, each month, the sum of $15 for each sale made in the previous month. This procedure worked out with mathematical exactness, with the result that the next consultation, about a year later, was to determine the efficient limits of development of the business, and the amounts which could legitimately be set aside in reserves to avoid the payment of excessive taxes.

Returning, however, to the original question of personnel and wage statistics, the problem in a nutshell is to secure and maintain a contented and efficient working force. Wage and cost studies come first. Then come studies to determine labor turnover and the extent to which it is, or may become, possible to guarantee continuity of employment to deserving employees of any given minimum length of service. These studies will involve related investigations of the possibility of manufacturing for stock and increasing sales activities during periods of business depression. Following such investigations will come studies of possible sick benefit, death benefit, and pension plans. And finally there will be studies for the establishment of automatic savings plans through regular deductions from payrolls.

All of the foregoing plans may have their proper place in the development of a sound working organization, and all will require accurate and properly analyzed records. But, here once more, it is necessary to emphasize the importance of combining the practical touch of the executive with the analyses of the statistician. To revert to a personal experience, the writer once had for decision the question of whether wages for a group of about 1,500 female employees should be increased 10%, or hours reduced from nine to eight. Some action was necessary to improve the number and quality of applicants for the positions involved, and to reduce turnover. It was hoped that the eight-hour day would serve the purpose, but general opinion among the officials of the company was that, since it did not seem practicable at that time to make both the wage increase and the change in hours, the wage increase must take precedence. Finally the writer, relying upon his close contacts with the working force, decided to put the question point blank to a typical group of the employees involved. Much to his surprise the answer was unanimously in favor of the eight-hour day at the old wage.

This incident has its bearings in many directions. When the confidence of a working force has once been gained, there can hardly be too much frankness in discussing the details of wage and piece-work plans, benefit plans, and so forth, with the employees directly affected. As a specific suggestion, it seems highly probable that in piece-work, as well as in daily or weekly wage rates, the judgment of the average group of employees will be in favor of a moderate element of increase with pure length of service, apart from any considerations of individual efficiency. Theoretically and statistically there may be no justification for such a plan, but here, as elsewhere, statistics and computations must be the servant and not the master of the human element.

Multiplying the Power of the Executive

Now, having swung, in the last few paragraphs, rather far away from questions of strict statistical detail, it is proper to complete the circle by recapitulating and by touching briefly upon the final and most important aspect of statistical control—its effect in relieving the executive from the pressure of details and enabling him to concentrate upon important matters.

As has previously been indicated, any successful program must be based upon a policy of gradual development, with the closest of cooperation between statistical and administrative forces. Each subordinate executive must feel that he is directing, and to a large degree is planning, his own statistics. The most fatal of all steps is to attempt to impose statistical control as a supermanagement over a skeptical and unwilling organization.

Beyond this initial requirement, there is the need for a continuing practical touch in every angle of the statistical work. The actual reports and analyses will vary in type from business to business, and from month to month in any given business, but the basis for all internal statistics must be accurate and properly filed records of current and prospective activities. It is much more important to know just where and how fundamental information may be obtained, when needed, than it is to multiply routine reports and compilations. Ordinarily it will be found that the primary records need only the most inexpensive kind of revision to make them thoroughly adaptable to all further requirements. Frequently, in fact, this initial review will be a source of economy, rather than of added expense.

With this solid background of accurate records once established, it is possible to simplify very greatly the reports which form the basis for routine statistical control. Each analysis, to justify itself as a routine report, must have a definite relation to executive action, and its indications must in every case be positive, either that conditions are satisfactory or that they are unsatisfactory, and, if the latter, *where* and *why*. Furthermore, the frequency of each report must be adjusted to executive requirements. Simple daily and weekly statements may be summarized, with added details, in monthly reports. Many reports may be made quarterly, semi-annually, or annually, with better effect than if made at more frequent intervals. Condensed reports covering vital points, with written comment calling attention to important changes, may go forward to the ranking executives, and these reports may be expanded in any necessary detail for subordinate executives—or the plan of the newspaper reporter may be followed, and each report may be headed by an ab-

stract of important items and may be amplified thereafter as required.

Supplementing these routine reports, proper attention to primary records will make it possible to rely very largely upon special studies made whenever the routine reports reveal conditions demanding detailed analysis. With these additions, the complete program of statistical control for the great majority of business undertakings will include:

1. The operating budget, with current monthly comparisons between the budget figures and actual results.

2. Monthly analyses of current and prospective business activity and price trends, as a guide to budget revision, production and inventory control, and sales and advertising policies.

3. Current administrative and cost statistics, as a guide to detailed executive action.

4. Wage and personnel statistics, which may be elaborated according to the character of the business.

5. Special statistical studies, which should be used freely as an alternative to excessive detail in routine reports.

The final test of the value of all the preceding program will lie in its success in multiplying the power and increasing the effectiveness of the responsible executives. It is a basic principle in business economics that the efficient size of an enterprise is determined by the point of balance between the increasing efficiency of processes and methods, and the decreasing efficiency of the human element, with growth in magnitude. When the volume of business is once great enough to permit full efficiency in processes and methods, further growth is ordinarily limited by the ability of a small group of active managers to spread their personal influence and enthusiasm throughout the organization.

It is here, in particular, that properly planned statistics have their greatest usefulness. If the executive will ask himself specifically and in detail what items and conditions he must watch and when he must act—if he will take each recurring problem and determine what facts are necessary for his decisions—it will not be difficult for a trained statistician to set up a series of periodic or special reports of such sort as to make the majority of these decisions a matter of relatively simple routine.

This picturing of a whole business, so that the essentials stand out sharply from the mass of detail, is the essence of statistical control. Charts, tabular statements, and narrative comment may be combined according to the taste of the executive. Many experiments must be made and abandoned before satisfactory results are finally obtained. There will always be new problems to be met and new conditions to be analyzed. But, in the end, the executive who perseveres will find a new range of vision in his business, a new length of arm and certainty of hand in his management of affairs, and a new power and responsiveness to brake or throttle in his whole organization.

PRESENT STATUS OF UNIFORM COST ACCOUNTING

By T. H. SANDERS

THE development and use of uniform cost accounting systems by associations of merchants and manufacturers during recent years have been notable features both in the accounting field and among association activities. Reference to the various uniform systems is to be found in all recent publications relating to cost accounting, and the impression is created that the difficult task of installing reliable cost systems in the great majority of the manufacturing establishments in this country has in large measure been accomplished. On the other hand, assertions do not cease to be made to the effect that "90 per cent of the manufacturers of this country do not know their own costs." There is obvious discrepancy between the two viewpoints, and the writer was interested to ascertain how far the associations concerned had succeeded with the actual installation and operation of cost systems in the offices of their members.

Extent of Uniform Costing

A questionnaire was therefore addressed to about 80 associations which have been widely mentioned as having adopted uniform cost systems.[1]

The replies were not so specific as might have been desired, yet enough information is available to throw light upon the situation. Replies were received from 38 associations in all, having about 17,000 members; practically all the large associations to which the circular was addressed furnished some information.[2] The extent of the response seems sufficient to justify the drawing of a few general conclusions.

Twenty-four out of the 38 associations made numerical statements as to the number of firms using their system. These 24 associations contained 14,576 members, and reported that 4,968 firms were using their cost systems. The latter figure, however, in the case of several of the larger associations, included non-members as well as members, making it difficult to compute the percentage of users to non-users. As nearly as could be judged, about 1,000 of the firms which were reported as using the uniform systems are not members of the associations. This would leave approximately 4,000 member firms using the system devised by their respective associations, or 27 per cent out of a total membership of about 14,500, representing very probably the

[1] Information was requested as to their total membership, the number of members or non-members using the system, the discovered weaknesses of the system, if any, and the extent to which the system was used by the association as a whole for the purpose of ascertaining average costs or securing other general information for the benefit of their members.

[2] Without further identifying the associations which gave information, it may be mentioned that the following industries are included among those upon which the present observations are based: crackers, confectionery, canning and food products; textiles, clothing, dyers and cleaners; tanning, leather-working and shoes; bricks, concrete and cement, lime, several lumber and woodwork associations; coal, foundry, metal work, machine tools, and other iron and steel industries; electrical manufacturers and dealers; manufacturers and dealers in drugs and chemicals; paper, paper boxes and labels; newspapers, printing and lithography.

maximum claim which can be made as to the extent of the actual use of cost accounting systems among the manufacturing plants of the country. This is the showing of the most active and enlightened groups, gathered together into their various associations, and after considerable urging from the association headquarters. It may be pretty well relied upon that no large groups of business concerns can show a more general use of cost systems than this.

Failure to Use Cost Data

In confirmation, one has only to turn to the results displayed by the group of 14 associations which were unable to make precise numerical statement as to the number of their member firms which used their cost system. These 14 associations showed a total membership of 2,417 firms, and their estimates of the extent to which their members used the system were vague and unconvincing. Only one association ventured so far as to say that "a good many" of their members used the system. This particular association has a small membership—in the neighborhood of 100—and represents an industry in which the unit plants are of considerable magnitude and for the most part in charge of efficient executives. The uniform system of this association has been carefully worked out, and is an excellent piece of constructive accounting; it is a safe guess that the majority of the members use it. The statements made by the other associations in this group, however, indicate great uncertainty as to the number of firms which have thought it worth while to take up a cost accounting system.

The question arises as to the causes which bring about the results stated. Why is there not a more widespread use of cost accounting? Why, in the case of the two groups referred to, is the former group able to make a much more definite and satisfactory showing than the latter? The situation raises in an interesting form the old question as to the real utility of a cost accounting system and the attitude which a level-headed executive should take with regard to the employment of this agency among his administrative tools. Are we to conclude that cost accounting is an unwarranted addition to the general expense burden of industry, or is it an essential and profitable part of the executive machinery?

In the case of the associations under observation, one fact is evident as a distinction between the two groups. Of the 24 associations whose members use their systems to an appreciable extent, 16 collect cost data upon points of special interest to their industry and give to their members, and sometimes to others, the benefit of such generalizations as can be drawn from the collected data. Among the 14 associations where cost accounting is used to a small and indefinite extent, only one association makes any attempt to utilize the results for the general benefit of its members. There is a strong presumption that those associations have been most effective in giving aids to their membership which have actively encouraged the installation of a cost system and followed it up by the collection of important facts which could be used for the common guidance of all members, and sometimes for the industry at large.

The Legal Situation

At this point, however, another question obtrudes itself. The issue of the legal propriety of some of these proceedings has been raised in various quarters. The judgment of the United States Supreme Court which terminated

some activities of the American Hardwood Association [3] has introduced much perturbation, and the extent to which associations of traders or manufacturers may contribute their information to a common center for joint uses still remains to be defined.

One of the first and most obvious benefits to be derived from uniform cost accounting within an industry is the possibility of having members compare their own individual costs with the average costs of all members. If the manufacturing costs of one firm are greatly higher than the average, it would seem to be in the interest of stable business for that firm to be informed of the fact in good time. Financial disasters are not to the advantage of the general community, and if the firm in question really cannot compete with the others, it had better be advised in good time and have an opportunity to withdraw from the business with the greater part of its assets intact. It will, however, usually find another course possible; by studying its position and facilities and all the elements of its costs, it will be able to make reductions in its expenses which will bring it more nearly into line with its competitors, a much more beneficent result than permitting it to go down to disaster.

These considerations seemed very obvious until quite recently. In a publication of the Department of Commerce, *The Glass Industry*,[4] written in 1917, the following passage occurs:

"He suggests that manufacturers, acting together, should publish the results of a study of their predetermined costs for the benefit of themselves as well as of their uninformed competitors. He says that this accurate knowledge of the lowest costs which have been obtained would result in the elimination of preventable waste and in a decrease of price cutting. Such data, if accessible to all manufacturers, would, in his opinion, cause them to fix selling prices with much greater uniformity than has been customary."

The proposal is evidently made in innocent confidence as to its integrity, and the appearance of the passage in an official publication would seem to confirm the reasonableness of the suggestion. The above mentioned American Hardwood case, however, has been the principal factor in casting doubt upon the situation, and at the present moment many things which seemed harmless a short while ago have been brought into question. The American Hardwood case itself does not, in point of fact, have any reference to cost accounting, but only to certain selling policies and the assembling of sales and price information for the benefit of members. But in conjunction with other incidents it has added to the uncertainty.

A letter from Mr. Hoover,[5] as Secretary of Commerce, to the Attorney General, asks for an informal expression of opinion upon many of the mooted points, the first of which ran as follows:

"(1) May a trade association provide for its members a standard or uniform system of cost accounting and recommend its use, provided that the costs so arrived at by the uniform methods are not furnished by the members to each other, or by the members to the association and by the latter to the individual members?"

It will be seen that the question itself contains the proviso that cost accounting information shall not be collected by associations for dissemination among its members; that apparently is assumed to

[3] *American Column and Lumber Company et al. vs. United States of America*, 257 U. S. 377, December 19, 1921.

[4] *The Glass Industry*, Miscellaneous Series No. 60, page 327.

[5] Dated February 3, 1922. See *Commerce Reports*, February 20, 1922.

be an illegal procedure. If this is so, it is very evident from the facts mentioned in this article that many associations are breaking the law, for the most enterprising and successful of them are in fact doing this very thing. The amount and kind of information which is gathered varies considerably, according to the nature of the industry. Some associations get information as to the average cost per unit of product; others show the average amounts of the several items entering into the cost of a unit of product; still others compute certain percentage ratios such as the percentages of labor, material and burden to the total sales of the period. Several associations show the average costs of certain major processes or operations. If these transactions are illegal, as implied in Mr. Hoover's letter, it would certainly seem desirable that the fact be made clear at as early a date as possible.

Relation to Anti-Trust Legislation

It has already been argued, however, that on a common-sense business basis, and as a matter of public policy, such proceedings should not be outlawed. While it is evident that information of this sort might be made the basis for collusion among manufacturers in a conspiracy to restrain trade or to enhance prices, yet they are not in themselves a restraint upon trade nor any sort of conspiracy to create monopolistic conditions. They are likely to be at least as beneficent as evil in their results, and if all the things which might be used to promote a conspiracy in restraint of trade are to be outlawed, many of the good influences of the recent cooperative spirit in industry will be sacrificed. The associations concerned have confidence in their own integrity; their operations are for the most part conducted openly and without thought of legal intervention, but it is most desirable that the situation be cleared up and the regularity of these transactions established. The replies of one or two associations which do not collect information were apprehensive on this score, and signified that they feared to compromise themselves.

In a case like this it is always difficult to draw the line between what may properly be permitted and what should be prohibited in order to preserve the spirit of anti-trust legislation; but it should not be difficult to make a clearer announcement of principle than is now available to the business public. Take the following statement by the Federal Trade Commission:[6]

> "Stated in another way, the conception of the Commission is that the efforts of a trade association to educate the individual member in the application of sound principles of cost accounting in his individual business, are proper. But that any subsequent effort of the association to reduce the individual costs to an average or uniform basis and to procure the use of the group standard as a basis of price making by each of the individuals in the group, is improper. The individual must fix his own cost and his own margin. The group may not attempt to substitute a group average or standard either of cost or margin for the individual's figures without being in peril of becoming an unlawful combination."

Some of the sentences in this paragraph combine the objectionable with the unobjectionable in a confusing manner. The Commission assumes that general or average figures cannot be worked out without being put to an illegitimate use — that the average figures will be "substituted" for the individual member's own cost figures. Such an assumption is not a logical conclusion from the premises; nor does it accord

[6] Published in Bulletin 11 of the Production Department of the United States Chamber of Commerce.

with what transpires in practice.[7] The passage could be re-written to set things in sharper relief in this manner:

"The conception of the Commission is that the efforts of a trade association to educate the individual member in the application of sound principles of cost accounting in his individual business, are proper. Efforts of the association to assemble and reduce the individual costs to an average or uniform cost basis, for the purpose of informing the membership about average conditions, and to facilitate the checking up of individual costs, are proper. But to induce members to substitute the group figures for individual cost figures, or by concerted action to procure the use of the group averages rather than of individual figures as a basis for price making, is improper. The individual must fix his own price and his own margin. The group may not attempt to substitute a group average or standard either of cost or margin for the individual's figures without being in peril of becoming an unlawful combination."

It will be seen that the amount of alteration from the original is comparatively small, but the line of cleavage is somewhat differently drawn.

The Utility of Cost Accounting

The larger question of the utility of cost accounting to the business man arises here. The familiar arguments, that cost information is a necessary basis for determining selling prices, that it promotes efficiency, reduces waste, indicates preferable methods of manufacture, and serves as a medium for the financial control of the factory, all have more or less weight, varying in different cases. But all of them together are less important than certain indefinable but very real advantages resulting from a cost system which concerns itself with those matters that really are of interest to the management, and leaves non-essentials alone. The difference between a management which is well informed, and one which is uninformed, can no more be covered by specific points than the benefits of a good education can be covered by giving isolated examples of its practical use. The steady flow of reliable data through the minds of the executives, on matters which are their principal concern, cannot fail to generate an understanding, an enlightened comprehension, which will work itself out in sound policies which otherwise would be much less likely to materialize.

So far as experience and the testimony of those most competent to judge are concerned, the evidence in favor of cost accounting is strong. Public officials whose impartiality cannot be doubted have added their consent to that which so many manufacturers and accountants know from their own experience. In a foreword to a pamphlet issued by the Federal Trade Commission in 1916, entitled *Fundamentals of a Cost System for Manufacturers,* Mr. Edward N. Hurley, the chairman, wrote as follows:

"To the American Manufacturer:

"The Federal Trade Commission has found that an amazing number of manufacturers, particularly the smaller ones, have no adequate system for determining their costs, and price their goods arbitrarily. It is evident that there must be improvement in this direction before competition can be placed upon a sound economic basis."

As Secretary of Commerce, Mr. Hoover has persistently expressed himself in similar terms; it is in fact his interest and belief in the usefulness of cost accounting which largely prompted

[7] Some arguments on this point are contained in a letter addressed to Mr. Hoover, published in the *Proceedings of the Eighth Annual Convention of the Millwork Cost Bureau,* pp. 4-10. The present writer knows of other instances which support the contention that, in a competitive market, members will bid on their own individual costs, to the disregard of the average figures of the association, using the latter only to check up their own figures.

his correspondence, referred to earlier in this article. Moreover, the practices of the largest, most efficient and best established manufacturing institutions in this country show that a complete cost accounting system is regarded by them all as a matter of course; the only question with them is how they can continually improve their methods and practices to give better and more illuminating information. Where firms like the United States Steel Corporation, the Bethlehem Steel Corporation, the General Electric Company, and all the other outstanding industrial concerns have adopted this attitude, it seems superfluous to raise any question as to the desirability of a cost accounting system.

Administrative Obstacles to Successful Use of Cost Accounting

What then are the reasons for doubt in the minds of the executives who constitute that majority which has hitherto decided to get along without this aid? First must be mentioned the fact that a large number of them do not understand or know how to use the data which a cost system would bring to their notice. This remark is not intended as a criticism, but rather to draw attention to the fact that very many business men rely upon their superior abilities on one side of the business to make up for shortcomings on another side. They do this so much, and in many cases so advantageously, that they are scarcely conscious of any shortcomings at all. Some chief executives, for example, are excellent salesmen; they think it a waste of time to bother about the general records of their business or the office routine when they can so profitably occupy themselves selling the product among their customers. Others are good engineers, able to achieve considerable mechanical efficiencies in the plant, and they believe that such performance obviates the need for detailed records. All of us are acquainted with cases where this kind of thing has been successfully practiced, and the appearance is created that cost records could add little to the success of such an enterprise.

But certain modifications to this conclusion need to be made. This reliance upon excellence in one department to achieve success for the whole business is possible only in businesses of limited size; the policy will itself limit the growth of the business. Furthermore, this limited growth and success are attainable only because the executive relies upon subordinate officers to take care of those departments of the business in which he is less interested. Such confidence is frequently misplaced, and cases have occurred in which sudden collapse has resulted from an executive finding that he has been betrayed. The fact is, of course, that while reliance upon subordinate officers is one of the essential elements in building up a large business, the competent executive will always see to it that proper reports are regularly forthcoming by which he can judge their merits.

Another common reason for the failure of many cost systems to function is to be found in the inability of the firms' bookkeepers and clerks to adjust themselves to the installation of a new system and to carry it on with patience and accuracy. It is the nature of people in such positions to be averse to change. They want so much to be let alone and to be permitted to pursue a quiet routine of duties that they are willing to continue at it upon low salaries rather than stir themselves to accomplish anything different or better. It is inevitable that the introduction of new methods should be disturbing to them, and they can

wreck the whole installation by continued lack of sympathy for it. Frequently the little matters of technique, which the accountant has devised to save work and provide short cuts, will look like formidable difficulties to the bookkeeper, though, if he gives himself a little time in which to become familiar with them, he will find them of distinct advantage to himself. Everybody with experience of this sort of thing knows that what seems to be an elaborate system will quickly become matter of routine to the willing bookkeeper. At this juncture two things are essential; one is that the employer himself shall have sufficient confidence in the accountants and in the proposed changes to lend his influence to bring the bookkeeping staff into a right attitude. If he will, in a firm but friendly way, let them know that he wants the system and the information which it will supply, they will in most cases gradually adjust themselves to the changes. The other essential is that the accountant himself shall have not only patience and tact with the bookkeepers, but also complete receptiveness to any specific objections or suggestions they may wish to make with regard to his proposed plans: in adapting his scheme to the details of the situation he cannot but profit by listening to the bookkeeper's difficulties.

Elaborate accounting systems have frequently been installed in manufacturing plants only to be discarded as failures; in many cases the trouble was with the system itself. Either there is too much system and too much elaboration for the particular case; or it fails to provide adequately and correctly for the multiplicity of situations and transactions which may occur in that business; or—worst of all—it fails to answer the questions in which the executives are most interested. It is here that the accountant's ability, not as accountant but as business executive, is called into operation. Unless he can visualize clearly what the managerial problems of the business are, and unless he has some proper sense of proportion as to the means which can be taken to solve them, he had better give up the task of endeavoring to aid the management of that concern. At this point he will find it profitable to keep in close touch with the firm's own bookkeeping staff, to listen to all their objections and suggestions, and to treat their complaints as possible sources of inspiration. The business executive who is looking for an accountant to undertake work of this sort should recognize that all these qualities are necessary.

Advantages of Uniformity in Cost Accounting

The advantages of having all the members of an industry find their cost results by the same methods have been often told, and need little elaboration here. Where orders are given on the basis of bids or quotations, it is clearly desirable for the industry as a whole that all quotations shall be made on the same basic information, and in the long run selling prices in every industry must bear their proper relation to production costs. Prices made in ignorance are disturbing to the even movement of business, and a clear apprehension of this fact has induced trade associations all over the country to include the promotion of uniform cost methods among their first objectives. Nor is it to be supposed that uniform methods will give uniform results; on the contrary, the adoption of uniform methods, based on right principles, is the surest guarantee of bringing to light all the real differences in facilities and costs among competitors.

If associations are to be prevented from assembling the average figures of their members, the usefulness of uniform costing in affording this reliable common basis for price making will still remain. But the members would be much handicapped in checking their own results and would be deprived of an index of general conditions which would serve them well. There is no good reason why the members should not have this assistance; to deny it to them would impede in some measure the modern industrial movement to substitute reasonable cooperation for unreasonable competition.

Many influences, operating in different spheres, are working toward the promotion of uniform accounting, both cost and financial. The Interstate Commerce Commission and the state public utilities commissions have all adopted mandatory systems of accounting for operating expenses throughout the public utility field. The Federal Reserve Board [8] has recognized the necessity for more standardized statements for credit purposes. The Federal Trade Commission has adopted its own forms for investigational purposes, and so has the Bureau of Markets. The Bureau of Business Research of Harvard University has been able to induce considerable numbers [9] of business men to make returns to it upon a uniform basis which presupposes some uniformity of accounting method; the most active groups in some lines of trade have thought it worth while to cooperate with the Bureau to this extent, for the sake of getting the results which the Bureau has been able to compile from the returns. Private firms are growing up which aim to perform a similar function in some one industry upon a commercial basis, charging the contributing members for accounting services and also for an advisory and statistical service based upon the combined returns. All these activities, intelligently directed, cannot but exert a stabilizing influence upon the industries in which they operate; the movement is aimed at the elimination of that ignorance which is apt to express itself in destructive competition, while permitting free play to competition based upon real differences in production facilities. In the provisions for accounting for idleness, and other usual features, it also makes a contribution to the better understanding of the cyclical movements of business. These are not only legitimate but very desirable things, and it is to be hoped, first, that the legal difficulties can be clearly defined and adjusted, so that the aims may be attained without association activities being called into question under this particular head; second, that business men will more generally come to realize the advantages which intelligent and reliable cost keeping affords; and third, that a body of accountants can be produced who can visualize what the executive problems are much better than accountants as a whole have done in the past.[10]

[8] See its pamphlet *Uniform Accounting*, Government Printing Office, 1917.

[9] For the year 1921, uniform returns of operating expenses were received from 389 wholesale grocers with an aggregate turnover of over $530,000,000; from 392 department stores with a turnover of $725,000,000; from 407 shoe retailers with a total turnover of $70,000,000; and from 190 retail jewelers with a total business of $10,000,000. See Bulletins Nos. 30, 31, 32, and 33 of the Harvard Bureau of Business Research.

[10] The leading members of the accounting profession have been the most constructively critical of accountants in this respect: few gatherings of accountants fail to produce some reference to it. The programs of the National Association of Cost Accountants will be found invariably to contain several papers emphasizing the point.

THE PROGRESS OF COMMERCIAL RESEARCH

By L. D. H. WELD

COMMERCIAL RESEARCH is nothing unusual or extraordinary. Practically every business man indulges in it to a certain extent, either consciously or unconsciously. Every time an executive makes inquiries about general trade conditions, or asks his salesmen what dealers are saying about his products, or compares his current sales results with those of corresponding months of preceding years, he is resorting to commercial research or business analysis. It is when he is doing this consciously, and in a systematic and comprehensive manner, and, perchance, hiring a specialist to enable him to do it more scientifically and extensively, that we dignify this class of work as "commercial research."

And we don't necessarily have to call it "commercial research" at all. We can call it "business research," or "business analysis," or "trade development." Or we don't have to call it at all! Neither does the work have to center in a separate department. There are many concerns without research departments that are doing better work than concerns that have them. And there are many who had been doing it effectively for years before the expression "commercial research" ever made its appearance in the business vocabulary.

In fact, even today, if you asked a hundred business men just what is meant by the term "commercial research," or just what field it covers, you would get pretty nearly a hundred different answers. Probably some wouldn't dare to hazard any answer at all. Since there appears to be a growing interest in this subject, however, and since systematized work along this line is definitely on the increase, it is worth while to attempt a description of the field it covers, to enumerate the principal kinds of agencies that are carrying it on, and to appraise its value.

No lengthy statement of the value of commercial research work is necessary in this place; it is assumed that students of business problems, as well as far-sighted industrial and commercial executives, appreciate the need of stepping away from their problems, viewing them as a whole, and applying fundamental principles of economics and business organization.[1] Although each business man is likely to think that his particular business is different from every other, scientific research has shown that this is not the case, and that there are economic principles applicable to all businesses. The fact that large-scale organization has taken the place of small units, that markets are so far-flung, that the merchandising machinery has become so complex, renders it practically impossible for an executive to attend both to managerial details and to the accumulation and analysis of all the knowledge and data necessary for an enlightened policy. The great increase in production during the past half century, and the multiplicity of advertised articles, make it more difficult to capture and maintain markets. Intensive methods are necessary today. Something more than "ginger" talks and

[1] Paraphrased from *Business Research and Statistics*, by J. George Frederick, p. 7. This book is very helpful to one interested in this subject.

enthusiasm are needed to make salesmanship effective. Prevention of advertising waste can be accomplished only through painstaking study and investigation. In the determination of buying, operating, and selling policies with respect to current and prospective trade conditions, less reliance need be placed on snap judgment and "hunches," and more time must be devoted to gathering data from various sources and analyzing them in a scientific way. The relation of business to the Government in these days of open-price associations, anti-trust laws, laws relating to unfair competition, and the growing tendency toward general Government supervision of business, is a subject requiring careful economic analysis and adequate presentation of facts. Constructive cooperation with the public and with the Government is taking the place of the "public-be-damned" attitude of the past.

The carrying on of the kind of work suggested by the foregoing problems cannot be done effectually without trained men. Unbiased market information cannot be obtained through salesmen; scientific sales quotas cannot be determined without expert statistical assistance; business trends cannot be developed by accountants; living costs and wage data from other industries cannot be collected and analyzed by busy plant superintendents; general economic and public-relations policies cannot be solved by corporation secretaries.

The right men to handle this kind of work are hard to find. They should have college training in economics and statistics, and also, if possible, practical experience in business, especially in the selling end. They must also be of such a personal type that they can mix with other men in the organization, and command their respect. They must not only have the confidence of executives, but should report direct to them, rather than to a sales manager or an advertising manager. Commercial research should not be established by any business concern unless there are specific functions and problems to be assigned. Commercial research departments that are too much aloof from executives and operating departments and in charge of men of the academic and too-theoretical type, who do research jobs that are not intimately connected with the practical problems of the business, are of little or no value.

What Does Commercial Research Include?

There can be no concise and clear cut definition of the field covered by commercial research. In the first place, it is generally understood as applying to the commercial or marketing part of business, rather than to manufacturing. This enables us to distinguish it from "industrial research" or "technical research" such as that conducted by the laboratories of many large manufacturing concerns, by a few trade associations, and by the National Research Council.

It is more difficult and probably impossible to draw the line between "commercial research" and what may be called "economic research." The fundamental difference is not so much in the character of the information collected as in the purpose for which it is collected. Economic research might be considered as the searching out of facts for the purpose of establishing general economic principles. Commercial research, on the other hand, might be considered as the searching out of facts to enable individual concerns to use better methods in the conduct of their com-

mercial affairs. It has been called the application of scientific facts and methods to the working out of practical business problems. The professor of economics who digs for facts to throw a new light on the theory of prices is engaged in economic research. The business man who makes a study of price policies of competitors in different parts of the country in order to establish his own price policy is engaged in commercial research work.

Since the term that we are considering is of such recent origin, and since it has already been used to apply to various kinds of research work, it is difficult to limit the field of activities which it covers. The writer is disposed to liberality in this respect and would allow the term commercial research to cover a rather wide range of activities. At least the principal activities which come under this head are listed below. No attempt is made to arrange them in order of their importance.

1. ANALYSIS OF SALES RESULTS AND SALES METHODS

This refers to the statistical study of sales by time periods and by geographical areas, selling expenses, routing of salesmen, average size of orders, the number of prospects called on each day, etc., etc. It also includes analysis of fundamental questions of sales policy, such as sale through exclusive dealers, advantages of selling direct or selling through jobbers, and location and supervision of branch houses.

2. MARKET ANALYSIS

It is perhaps this type of work more than any other that the term commercial research suggests to the majority of business men. It has to do with such questions as the percentage of stores in which a certain product is handled, the extent to which competing goods are carried, the attitude of dealers and consumers, and the market possibilities of an article.

3. ANALYSIS OF ADVERTISING RESULTS

This refers to measuring returns from keyed advertisements, finding the cost per inquiry, figuring advertising costs in relation to sales, and so forth.

4. STUDY OF BUSINESS CONDITIONS AND BUSINESS CYCLES

Business executives are beginning to realize the importance of planning their purchases of raw materials, the extent to which goods are manufactured for stock, the percentage of capacity to which the plant shall be operated, and their selling and price policies, on careful studies of the ups and downs of business conditions. This is coming to be one of the most important branches of statistical analysis that may be considered as a part of the field under discussion.

5. ANALYSIS OF RAW MATERIAL MARKETS

In many industries the sources and price movements of raw materials require special study.

6. DETERMINATION OF SALES QUOTAS

Whenever a company uses sales quotas for maintaining efficiency of salesmen or as a basis for compensation of salesmen, much careful statistical work is necessary to establish them equitably. This should be done in close cooperation with the sales department, but much of the work can best be done by specialists in statistical compilation and analysis.

7. SEEKING NEW USES FOR A PRODUCT

Work of this sort is particularly necessary in developing the market for new or relatively new products, such as celluloid, imitation leather, radio outfits. There is often work of this nature to be done for old established products, such as copper, brass, cement, and electricity.

8. LABOR PROBLEMS

Specialized statistical work is of great service to the plant management or to the industrial relations department in matters of wage adjustment by keeping up to date and analyzing data on cost of living, wages in competing industries, unemployment, and relation of wages to production cost and to financial results of the business.

9. GENERAL ECONOMIC PROBLEMS

Most industrial leaders want expert advice on matters of general economic problems, such as the tariff, immigration problem, the sales tax, and so on. The tariff offers a good illustration. If a manufacturer wants to support his position for or against proposed duties, perchance before a Congressional committee, he must not only have a sound economic basis for his arguments but also scientifically prepared statistical data.

10. RELATIONS WITH THE PUBLIC AND THE GOVERNMENT

This is closely allied to the question of general economic policy. Industries have their special problems with respect to the attitude of the public toward them, the extent to which they are misunderstood, and the dangers of restrictive legislation. An industry against which a prejudice has developed should be able to explain to the public and to investigating committees the economic justification for its form of organization and its methods of doing business. (The writer speaks with feeling!)

11. GENERAL STATISTICS

Most of the activities described above call for statistical work, but there are many other matters connected with internal management problems, as well as with affairs outside the industry itself, in which expert statistical analysis, supplemented by graphic presentation, is necessary.

Agencies Performing Commercial Research Work

We are now ready to consider the machinery available for carrying on commercial research work. Work of this sort is done not only by business concerns themselves, but by many outside organizations which specialize in particular fields of research work. There is an advantage to a business concern in doing its own research work, if possible, rather than to rely too much on outside agencies, because those doing the work must live in the business and know the idiosyncrasies of the people involved, if they are to understand the problems and make practical recommendations. Perhaps the principal problem is to decide whether a business concern should provide for organized research work through a separate department. This depends principally on three things:

First, the size of the business. It is quite out of the question for a very small concern to have a separate commercial research department. Large and medium sized companies can often reduce the expense and increase the effectiveness of this work by having it center in the hands of specialists.

Second, how it markets its products. A cotton mill which sells its output entirely through a commission firm in a distant city has very little need for commercial research work. On the other hand, a manufacturer who sells direct to retailers on a national scale has great need for it.

Third, whether the product is advertised. If a product is advertised there is naturally a much larger field for

analysis of sales, advertising results, and markets.

In order to get some idea of the extent to which business concerns are developing commercial research work, the writer sent out a list of questions to nearly 200 large companies, mostly manufacturers, the great majority of whom are also national advertisers. Advertising agencies and banks are not included, although separate information was obtained from them, as will appear below. The questions asked what commercial research work is being carried on, whether a separate department is maintained, what it is called, to whom it reports, whether work was curtailed during the business depression, and whether such work is considered of value. There were 62 replies. This was a fair response and compares favorably with results which the writer used to obtain through the questionnaire method when he was in academic work.

Out of the 62 replies there were 18 that reported separate departments or divisions that might be considered as performing commercial research work. Six of these operate under the name "commercial research department." The others have a variety of names, such as "statistical department," "sales promotion," "research and development," "market analysis," "development," and "commercial survey." If the writer were to include his own company, he could, of course, add one more department under the name "commercial research." And there are undoubtedly several others having departments of this sort among those from whom no information was obtained.

But the fact that only 18 reported a separate department gives no idea of the amount of commercial research work being done by the 62 who replied. There are several which have statistical departments which are apparently doing a certain amount of research work, but which appear to be primarily adjuncts of accounting, sales, and advertising departments, and whose activities have not broadened sufficiently to classify them as "commercial research" departments. Many others claim to be doing research work through their sales departments; others report research libraries. About 30 reported no work of this kind, but some of these referred to work done for them by advertising agencies, and many expressed an interest in developing work of this kind in the future. A few of the replies indicated that the officials who replied had little or no conception of what "commercial research" means. Five told in detail about the industrial and technical research that they are conducting.

It is interesting to note that a few large corporations, which have been engaged in commercial research work for some time, have this work divided among two or more separate divisions or departments. For example, the American Telephone and Telegraph Company has its "Commercial Survey Division" under the Commercial Engineer of the company, which studies market needs, future requirements, and rate structures; and its "Statistical Department," which studies business conditions and other matters. One very large corporation has a "Development Department," reporting to the executive committee, that studies commercial and financial conditions in connection with possible investment in new enterprises; an "Application Research Department," reporting to the director of sales, that studies new uses for one of its principal products; a "Sales Record Section" in the sales department, that makes geographical sales analyses; and a "Statistical Analysis Division" in the

treasurer's office, which studies and forecasts business conditions. This particular company has such a wide variety of activities that decentralization of research activities is undoubtedly justified.

As for the positions of the 18 research departments within their respective organizations, nine appear to report to the sales managers; the others report to higher executives, such as the president, the treasurer, the secretary, or a vice-president. In so far as a research department is a part of the sales department, its functions and usefulness are restricted. If it is separate from the sales department and reports direct to a vice-president, who is also a director of sales (not a sales manager in the ordinary meaning of the term), this arrangement is more favorable for scientific and unbiased work.

It has been said that commercial research work has received a setback during the recent business depression, and that many concerns have abolished such departments, or at least seriously curtailed their activities. There is some evidence that this has been the case. Two large and well-known companies report that they had such departments, but that they have had to do away with them. Both, however, claim that the work is kept up to a certain extent by other departments, and profess to believe in the value of the work. One at least is well known to have been in such serious financial straits that it is not surprising that the research department was lopped off, together with various other parts of the organization. A few companies reported a slight cutting down of their personnel.

On the other hand, there is evidence that business analysis work has received an impetus during the period of business stagnation. Many companies have undoubtedly begun to realize that they could have avoided some of their losses if they had had the right kind of investigational work in progress. Many reported that they had not cut down this work during the past two years, but had gradually increased it. A few research departments have been organized within the past year, and many companies, which do not have separate departments, have begun to pay more attention to this kind of work. One reply, from a large hardware manufacturer, was most enlightening:

> "We have not curtailed our work along this line during the past two or three years. We did, however, cut it down during the war years when we had more business than we could reasonably take care of, but during 1919 and 1920 we realized that the high peak of volume would not be maintained, and that the depression was bound to come, and during the past two or three years we have been doing more along this line than we did during the five years previous."

The research activities reported by the companies which furnished information fall under the classification discussed in an earlier part of this article. It is apparent, however, that there are but few research departments that attempt to cover the whole field. Most of them specialize in one, or two, or three of the functions that might be performed by such a department. The most common functions performed are those of market surveys and analysis, analysis of sales records, and the study of business conditions and business cycles. A few specialize primarily on developing new uses for products and new markets therefor. Others specialize on determination of sales quotas, or on analysis of advertising results, while still others have no special line of work, other than to make investigations on various problems submitted by other departments. Practically all companies doing research work report that they be-

lieve in the value of the work, and expected to continue and even expand it in the future.[2]

In addition to work done by business houses themselves, there are the following agencies engaged more or less in commercial research work:

Advertising Agencies.
Publishing Companies.
Special Research and Statistical Organizations.
Banks.
Trade Associations and Cooperative Enterprises.
Government Bureaus.
University Bureaus of Business Research.

ADVERTISING AGENCIES are probably doing a greater volume of commercial research work than any other kind of business organization. Until a comparatively few years ago advertising agencies planned campaigns and prepared copy for clients without making any real investigations of the product to be advertised or the markets to be reached. They relied too much on snap judgment in planning their policies and selecting mediums and too much on the brilliancy and imagination of clever writers in the preparation of copy.

This has largely changed within the past 10 or 15 years, and advertising agencies have come to realize the importance of careful study and investigation before the launching of a campaign or the writing of copy. In fact, the actual writing of the copy has come to be a relatively much less important function of advertising agencies than it used to be. Some operate on the theory that if a proper investigation is made, and the advertising plan is correctly worked out, the writing of copy comes more or less automatically as a by-product of the rest of the work done. This change in point of view has been a rapid one and perhaps has gone too far in some instances. At least, there are many who believe so.

The research activities of advertising agencies are confined largely to making surveys and market investigations. They also collect statistics and maintain libraries. Their investigations often include a survey of the organization and selling methods of their clients. Sometimes they assist clients in finding new uses for their products. Many of them also make studies of business conditions.

In order to be able to report on research activities of advertising agencies, the writer obtained fairly complete information from 32 agencies, including most of the largest and best known in the country. It was found that just half of these have separate departments for carrying on research work. Nine of these 16 call their departments "research" departments; two of them use the name "commercial research"; other names are "research and statistical department," "marketing division," and "trade research department." Many of

[2] So many of those who replied asked for information about the work of Swift and Company's Commercial Research Department that a few words on this subject may not be out of place. The principal activities of the department have to do with market analysis, study of business conditions and business cycles, analysis of raw material markets, labor problems, general economic problems, relations with the public and the Government, and general statistics. Problems of relations with the public and the Government consumed an inordinate amount of attention during the first two or three years of the department's existence, but work along this line has been supplanted gradually by the other functions enumerated. The work in statistics has mounted in importance, and this includes general statistics of the industry, internal statistics of plant operations and sales, labor statistics (used in wage hearings and in relations with employee representatives), and business cycles in their relation to buying and selling policies. Analysis of markets and of selling methods has also been growing in importance. The department was established in 1917, and reports directly to the president of the company.

the agencies say that their volume of business does not justify the maintenance of separate departments, but that they do more or less research work as the occasion demands. Some agencies report that when a client's business is investigated, the research work is done by the department or executive that has charge of the particular account in question. It is argued that there is an advantage in having the work done by men who have a special knowledge of the product, rather than by a separate department which cannot be expected to have the same intimate acquaintance with the problems at hand.

A few advertising agencies have their research work organized on a large scale, and apparently do a large volume of this kind of work. One reports that "In the past two or three years we have made approximately 50 national investigations, including all but four states in the Union; visiting every city in the country of 25,000 population and over; traveling 182,000 miles. We have interviewed 14,000 persons, and produced 10,000 typed pages of reports."

Advertising agencies are paid a fixed commission for the services they perform, and their net profits depend on the extent to which their expenses use up these commissions. Thoroughgoing market surveys are more or less expensive to carry out, and hence it is of interest to know whether agencies include this work as a part of their regular services or whether they make extra charges. The answer seems to be that when market investigations are local in character, or when they involve only incidental expense, they are included as a part of the regular service. This is true also of such investigational work as is necessary in the preparation of copy and in the carrying out of the other ordinary functions of an agency. When, however, the client calls for a special investigation, and one which involves considerable expense, the agency makes an extra charge. Commenting on this matter, one agency says:

> "Investigation work necessary for the performance of strictly our own work for the client we consider part of our service. Investigation work primarily for his broad marketing policies, including merchandise, trade relations, handling of sales organizations, we consider on his side of the fence."

Many agencies consider that they ought to make no profit on such investigations, and consequently charge on a cost basis. Others charge clients cost plus 15 per cent. Some charge a fee or lump sum, determined before the investigation starts.

Asked whether they believe that the demand for market analysis is growing, most of the agencies answered "yes," but a few of them said "no." These few expressed the opinion that market research work had been over-done by many advertising agencies, and that much of it had been so poorly done as to result in waste of time and expense. It is claimed that many investigations have been "made for show"—more with the idea of impressing their clients with the profound and extensive nature of their work than with the accumulation of facts on which better selling and advertising policies could be based. It appears that national advertisers are learning to discriminate between such investigations and those that have real value. Practically all agencies agree, however, that investigation work is necessary in the proper conduct of a campaign. Some agencies, when they are not equipped to do this work properly themselves, call on newspaper and magazine publishers, and sometimes have research work done by outside concerns that specialize in this field.

It is a little difficult to evaluate correctly the research work done by advertising agencies. The glowing descriptions that some of them give of their research work often exaggerate its value. There are men who claim that an advertising agency cannot make an absolutely impartial and unbiased investigation, because it always has in mind the desire to get the client to spend more money in advertising, and because it devotes so much of its energy to making a "profound impression." Many market investigations are made in order to get material for use in soliciting accounts. In such cases, desire to impress the client perhaps eclipses scientific considerations, although undoubtedly even such investigations often yield useful facts.

Many advertising agencies have research departments that are not worthy of the name. Some that have no separate departments are doing very good research work. There are apparently relatively few agencies that have really well established research departments in charge of trained and experienced men. Some of these are doing excellent work and have been a powerful influence in eliminating waste in advertising and in making the selling methods of clients more effective. There can be no doubt of the value of research work done by advertising agencies when such work is done conscientiously to solve specific problems rather than to "make a show" of elaborate service, and when it is done by men who have the proper combination of scientific training and business experience.

PUBLISHING COMPANIES. — Commercial research work has been developed by magazine, newspaper, and farm paper publishers. Although their main object has been to attract more advertising, many publishers have done constructive work. The Commercial Research Department of the Curtis Publishing Company is probably the best known department of this kind in the country. Its general studies of certain trades, as well as special investigations it makes for companies which are advertising in its columns, have been of real value. Other magazine and farm paper publishers have been developing this work within the past few years.

Many newspapers have also developed market research work in the localities where their papers circulate. The writer obtained opinions of many advertising agencies as to the quality and effectiveness of the service rendered by newspapers. Many of them reported that certain newspapers are very helpful in furnishing information about local conditions, about the percentage of distribution obtained by any particular product, and about business conditions in their communities. Many of the larger advertising agencies, on the other hand, which have their own research departments, claim that the work done by newspapers is superficial in character, and that it is carried on too obviously for the purpose of impressing the agency with the desirability of placing advertising in their columns.

The correct evaluation of market analysis work of newspapers is probably found in the answers of those agencies which say that although newspaper investigations cannot be relied on as a complete basis for an advertising campaign, their information is nevertheless valuable as a check on the research activities of the agency. Some agencies report that they do not rely on conclusions drawn by the newspapers, but that they find the actual answers to specific questions obtained by newspaper investigators valuable data to use in

connection with similar data obtained by the agencies themselves.

SPECIAL RESEARCH AND STATISTICAL ORGANIZATIONS. — Under this head come special market analysis bureaus, statistical organizations like the Harvard Committee on Economic Research, and the Babson, Brookmire, and Standard Statistics organizations.

A few specialized market analysis bureaus have appeared to satisfy the growing demand for this kind of work. They are employed by advertising agencies to study the distribution of particular products, and they are also employed directly by business concerns, not only to make field surveys, but oftentimes to make careful analyses of sales organization and methods. A few men who have entered this field call themselves "sales engineers." Some of the work done by such companies has been disappointing, because they have not been sufficiently close to the problems of their clients to render practical service. Others have become so thoroughly immersed in their clients' problems as to have rendered substantial assistance in the solving of sales and advertising problems.

In so far as such a company is equipped to do efficient work it has three advantages: first, it has an unprejudiced point of view in making its investigations; second, it can develop a permanent corps of experienced investigators; and third, it can save money for the business house or the advertising agency which has only occasional need for making investigations, and which would find it expensive to enlarge its organization temporarily.

The work of such statistical organizations as the Harvard Committee and Babson's organization in the field of business conditions and business cycles is well known, although it might be mentioned in passing that to obtain full value from such statistical work it is necessary for a business concern to make its own statistical studies, both as a check on the information obtained from outside agencies and as a means of linking up the general information thus obtained with its particular problems and with the movement of prices of commodities in which it is especially interested.

BANKS.—Although not many banks have entered this field, a few of the larger ones are doing important work. Some of this work is primarily for the benefit of executives to help them in determining their loaning and investment policies. For example, studies are made of the conditions of various industries and of specific companies, so that the bank may know how far to go in loaning money. Such studies include not only the financial position of such companies, but their selling methods, their markets, stocks on hand, production costs, price fluctuations, and so forth. General statistical studies of money rates, speculation, and so on, are carried on. Important business cycle studies have also been made by some banks, as, for example, the Cleveland Trust Company. The research department of a bank in a large Western city made interesting "market surveys" in order to determine the best locations for branch banking offices. These surveys covered "population of various neighborhoods, the natural drift toward the neighborhood business center, street car traffic and transfer points, automobile traffic, type of population, wealth of population, and so on."

Other banks maintain research work largely for their customers—and for prospective customers. One Eastern bank has gone so far as to prepare a book from the sales manager's point of

view, in which the various states and countries are presented in map form, together with condensed information and statistics on the economic character of each territory, the amount and type of population, the extent to which education is carried, the natural resources, transportation conditions, financial condition, and principal cities. A Western bank makes studies of plant locations for prospective manufacturers. It also provides a regular news service for clients, and special studies are made, such as the effect of the war in Asia Minor on the California raisin industry, the China Trade Act, and so on.

A few banks have done most valuable work in developing and disseminating sound economic information. The very important work of the National City Bank of New York comes vividly to mind. Some banks frankly call their specialists "economists"; some, who aim primarily to serve customers, call their departments service departments. Generally speaking, the commercial research work done by the banks is of a high order.

TRADE ASSOCIATIONS AND COOPERATIVE ENTERPRISES. — Many trade associations have performed commercial research activities in the collection of statistical data on stocks on hand, volume of output, number of machines in operation, sales by sections of the country, prices received, and so forth. Some have gone so far in the operation of open price associations as to get themselves into trouble. Some trade associations have made important studies of operating costs and of trade practices. On the whole, however, except for the collection of certain price and tonnage statistics, trade associations have not done particularly important work in the general field of commercial research. This work, however, is developing. The Chamber of Commerce of the United States, through its Department of Domestic Distribution, might be mentioned in this connection. Many local Chambers of Commerce are doing more or less research and statistical work in their various communities. The Association of National Advertisers should also be mentioned.

Under cooperative enterprises, there is a group of large stores, organized for research purposes, which makes studies of operating costs, delivery methods and costs, advertising methods, and so forth. The Bureau of Railway Economics is doing some work that might be considered commercial research. Some of the large cooperative marketing associations have studied merchandising costs and methods. The Farm Bureau Federation is doing research work in business conditions and in various phases of the economic problems of agriculture.

GOVERNMENT BUREAUS. — Many Government departments are engaged in research work of a commercial character. The Census Bureau, for example, collects and disseminates current information about specific industries, such as, for example, the reports on cotton ginning. The Bureau of Foreign and Domestic Commerce is issuing most important business statistics. The Bureau of Labor, the Bureau of Agricultural Economics, the Federal Trade Commission, the Tariff Commission, and occasionally a Congressional committee, furnish basic information that is invaluable to business houses and other organizations engaged in research work. Many of the individual states also have market and statistical bureaus that come under this head.

SCHOOLS OF COMMERCE AND AGRICULTURE.—The primary object of the

work done by individual instructors and by bureaus of business research in the universities such as those at Harvard and Northwestern, is to develop fundamental principles of business organization and methods; but much of this work is so directly and immediately applicable to specific problems of individual business houses that it might be called commercial research. In a broad sense, it is all commercial research. The Harvard Bureau of Business Research makes its appeal to business men by pointing out the practical value of its findings. Perhaps this Bureau has concentrated so much on the accumulation of facts about individual trades that it has not had time to develop certain fundamental principles of business to the extent that one might have expected after the length of time devoted to this work and from the wealth of data collected. This remark is not made for the purpose of belittling the very important work that has been accomplished, and at least one article in the first issue of the HARVARD BUSINESS REVIEW indicates that the time has come when we may now look for more studies of a fundamental nature from this Bureau. The collegiate business schools are giving the very best kind of training for the development of men to engage in the field of commercial research, and they, together with agricultural economists, are furnishing most important fundamental business and marketing data which are invaluable to individual business houses in developing their own research work.

In conclusion it is safe to say that there is a growing appreciation of the value of commercial research, and that there is developing a specialized field, calling for men of particular training, who can study business problems effectively from a somewhat detached and at the same time practical point of view. A great deal of the commercial research work that is being done is somewhat superficial. Some of it is of little value because it is carried on by enthusiasts who look on research work as an end in itself, and who do not couple it up with vital problems in a practical way. Business men are beginning to distinguish, however, between this type of work and the work that is of real value in determining business policies, in cutting down expenses, and in earning greater profits. The amount of work of this character is on the increase, and will become more and more necessary as time goes on.

THE NEED FOR INTERNATIONAL UNIFORMITY IN BUSINESS STATISTICS

By GEORGE B. ROORBACH

A LARGE exporter of steel products, desiring to obtain the necessary accurate information for the intelligent conduct of his South American business, recently attempted to secure a comparison of the volumes and values of the exports of various lines of steel goods from the United States to Argentina with similar exports from the United Kingdom. Much to his surprise, the executive discovered that for many items—items necessary to give the detailed information desired—the comparisons either could not be made, or could be made only approximately. The method of classifying steel products in the British export schedule, he was told, differed materially from the classification used by the United States, and the Argentina classification of imports differed from both. Many items in the three classifications were not comparable. Hence, he could not get the information needed. Furthermore, in the case of those items where quantity comparisons were possible, it was found that unit valuations of goods imported into Argentina from different countries showed remarkable uniformity when computations were based on the Argentina statistics, but widely different values when based on the export statistics of either the United States or the United Kingdom. Investigation disclosed the fact, not recognizable upon casual examination, that in Argentina the values placed upon imported goods are arbitrary values. That is, at stated intervals, an official valuation is placed upon the various classes of imported articles from all countries, and these valuations are given to the imports without reference to the actual market values or to the country of origin. Since these official valuations are changed only at long intervals, the declared valuations may, and do frequently, vary widely from market valuations. In periods of falling prices they give greatly overstated values to imports, and in periods of rising prices, values far under actual values.

The above experience of the steel exporter in obtaining statistical information in the Argentine trade partially illustrates the difficulty of obtaining dependable international commercial statistics. Lack of uniformity in the classification of commodities and wide divergence in the methods of valuation are only a part of the difficulty. So diverse are the methods and classifications used by the various governments in collecting their import and export trade statistics, as well as statistics of production, that for many purposes, both for business and for the study of general economic conditions, international statistics are not only inadequate and confusing, but often also misleading. Business men are daily using the trade statistics of foreign countries, and basing decisions upon them, without appreciation of their limitations. Economists and statisticians find the variations so great that very frequently international trade comparisons, vitally necessary for correct interpretation of

business conditions, are either impossible to make or are not reliable when made.

The inconvenience and confusion caused by this situation can be remedied to a large degree if the important commercial nations can be persuaded to adopt more uniform methods of classification and valuation in their official statistics, and if business men in different nations, through mutual agreements, can be induced to supply central international statistical organizations with the requisite data. Preliminary steps have already been taken to bring about these results, both by government agencies and by private business organizations.

I. Reasons for Lack of Uniformity

The existing difficulties in the way of securing comparable trade statistics can be illustrated by import and export statistics. Lack of uniformity in these statistics is found in:

1. The classification of commodities used in import and export schedules.
2. Units employed to give quantity.
3. Methods of valuation.
4. The meaning of terms "imports" and "exports."
5. Country classifications and methods of determining countries of origin or destination of trade.
6. Time intervals, i. e., monthly or quarterly; and variations in fiscal year.

1. Classification of Commodities. Wide variation in classification is the greatest handicap to securing comparable business statistics in international trade. In the grouping of commodities, there are as many methods as there are countries. Some countries list the items in their schedules alphabetically; others arrange them according to the degree of manufacture; some according to use; some in reference to the nature of the component materials; some have a combination of methods; and some apparently no method at all. Even when the same group headings are employed, the items included may differ widely. For example, the British, French, German, and United States statistics summarize according to degree of manufacture. But "raw materials," "foodstuffs," "semi-manufactures" or "manufactures" include widely different items in the different schedules. To compare the exports of "raw materials" as given in the British schedule with the same group in the United States schedule is misleading. They are not comparable. Some items classed as raw materials in the American classification are semi-manufactured products in the British, and vice versa. The same is true with "foodstuffs." One country, for example, will put the important item, vegetable oils, under "foods," but another will classify it as "raw material." Comparisons of these great groups therefore become not only meaningless but misleading.

A recent attempt to compare the glass trade of the United States, Japan, and Belgium gave very unreliable results. One country includes under "glass," as does the United States, "lenses;" Japan puts "lenses" under "scientific instruments." Items that are included under "glass" in one country will be under "art goods" in another, and possibly under another caption in a third. To compare the trade in "glass," therefore, without taking these differences into consideration, is misleading and false. But the casual user of business statistics is constantly doing this kind of thing.

In some countries, notably in the United States, the import classification differs from the export classification, and in several instances comparisons between exports and imports are impossible. This condition is due to the desire and the need in most countries to make the import classification agree with tariff classifications. Generally, tariff classifications have little or no reference to commercial uses or even to commercial terms. In the United States this condition is being remedied. A new export classification was put into effect January 1, 1922, built upon an elastic decimal form and based primarily upon its usefulness to business. The import classification has also been revised so as to make comparison with exports readily possible, and at the same time to include the detailed classification of the new tariff.

2. UNITS OF QUANTITY. There is no international uniformity in the units used to designate quantity. Some nations report all imports and exports in weight units; some report only a few in weight. Commodities that are given in weight in one country are given only in value in another. Some countries report a given commodity in one kind of quantity unit, some in another. For example, cotton cloth is variously reported in linear units, in square measure, and in weight units. To compare 1,000 kilos of cotton cloth with 1,000 yards is impossible. Even when weight units are used, one country may use "gross weight" while the other uses "net weight." Both "gross" weight and "net" weight may be variously interpreted.

Because of variations in prices of commodities and in the values of money from year to year and country to country, commodity comparisons by value only are meaningless and therefore the use of quantity units that are comparable are almost indispensable in trade comparisons. The method now required in order to get quantitative comparisons is a complicated, difficult and not altogether reliable conversion, by means of price indices, from values to quantities.

International agreement as to quantity units is much desired by business interests. An illustration of the recognition of this need by business is given by the National Automobile Chamber of Commerce. Because certain countries, important in the automobile export trade, have no uniformity in their statistics of automobile exports, this organization has applied for aid to the International Chamber of Commerce, stating, in part, that "whereas, it is realized that in determining the trend of international trade in motor vehicles, export figures will have a limited usefulness unless these three countries also agree to adoption of some basis of tabulation that is uniform in its major aspects to all; therefore, be it resolved, that attention shall be invited to the delegations from France, Italy, and Belgium to the desire of American manufacturers, as expressed by the National Automobile Chamber of Commerce, to cooperate in any plan that will result in uniform statistics pertaining to exports of commercial vehicles and passenger cars, by number and value, from principal producing nations." Similar expressions concerning improvement in trade statistics have been conveyed to the International Chamber by representatives of the petroleum industry, the construction industry and others.

The establishment of international uniformity in quantity units does not imply the adoption of the metric system, or any other system of measurement. It means uniformity as to kind of unit

for any given commodity—weight, linear, number, and so forth, and the uniform application of the unit. Pounds and kilos, or yards and meters, are readily comparable; but pounds and yards or kilos and meters are not.

3. METHODS OF VALUATION. All countries report trade statistics by values, but the principles upon which value is determined are so widely diverse that international comparisons by value are often impossible. Values may be declared values, estimated values, invoice values, or arbitrary values. The following systems are used:[1]

(a) Official valuations based on declarations of importers and exporters.

(b) Official valuations based on the current market value of the goods in the country under consideration.

(c) Official valuations calculated each year and varying for imports according to the country of origin.

(d) Official average valuations calculated each year, no difference being made on account of the country of origin.

(e) Official average valuations made at irregular intervals.

(f) In any of the above cases, the value of imports may be estimated either "c. i. f. port of arrival" or "f. o. b. port of shipment."

Most countries show c. i. f. values for imports and f. o. b. values for exports. The United States, however, is a notable exception, since imports are given the f. o. b. value, port of lading, instead of c. i. f. values at ports of arrival. The foreign values of imports are given also in the commerce reports of Canada, Cuba, Mexico, the Philippine Islands, and British South Africa.[2]

In some cases, official valuations are placed upon imports, but actual declared values are given for exports. Such is the case in Switzerland and Germany.[3] In such cases, even a quantitative comparison of exports and imports is impossible within the country, not to mention the impossibility of comparisons with other countries. "Only in the case of those countries which base their figures on declarations of value or on market quotations at the time of import or export, is it possible, under existing circumstances, to group their balance of indebtedness at any date either in their own currency or in terms of gold."[4] When valuations are based upon average values, and changed at irregular intervals, comparisons with previous years or with actual current conditions in other countries are impossible. This is well illustrated by the trade figures of France. Imports for August, 1919, based on 1917 official price valuations, were given at 4,009,677,000 francs; the revised figures on 1918 price valuations were 2,506,000,000 francs. Corresponding figures for exports were 1,239,584,000 francs, and 630,000,000 francs. The trade balance for the month would appear to be, in the one case, 2,770,093,000 francs, but in the other only 1,876,000,000 francs.[5]

A further difficulty in making value comparisons, particularly troublesome at the present time, comes from the conversion of foreign currencies into dollars. The practice has been in gen-

[1] *International Financial Conference*, Paper No. V, 1920, p. 15.

[2] J. J. Kral, *Methods of Computing Values in Foreign Trade Statistics*, Miscellaneous Series, No. 59, Bureau of Foreign and Domestic Commerce.

[3] Idem.

[4] *International Financial Conference*, Paper No. V.

[5] Idem.

eral to convert at gold parities and many trade statistics are now given with such conversions. In the case of countries with depreciated currencies, such figures are evidently of little value. On the other hand, the selection of a conversion rate is a problem variously solved, and results vary with the method used.

4. Variations in Meaning of Terms "Imports" and "Exports." As in the classification of commodities, there is also variation in the use of the terms "imports" and "exports." Some countries include in "imports" all goods received, whether for consumption, for warehouse, or for transhipment or re-export. Other countries distinguish between "general imports" and "special imports" or "imports for consumption." "Exports" may mean all exports, including re-exports, or only exports of domestic products. Variations are so many that comparisons in many cases cannot be made with accuracy or certainty.

5. Country Classifications. Diversity exists in the classification of countries and in the method of determining the country of origin or destination of goods. It is evident that comparisons of the statistics of two different countries will be difficult or impossible as long as the signification of "country of origin" or "country of destination" is not identical. Is the "country of origin" the country of production, the country of purchase, or the country of loading?

Also, it is evident that lack of uniformity in the use of geographical expressions leads to difficulties in making comparisons. Country classifications are not uniform.

6. The periods covered by statistics and the time of publication are a minor factor in securing comparability of statistics, but nevertheless confusing. Current statements of the trade of Argentina, for example, can be secured for quarterly periods, while most other countries give monthly returns. Yearly figures will be according to the fiscal year of the reporting country, and may or may not correspond to the calendar year. Shall the yearly figures of a country whose fiscal year ends on June 30, 1922, be compared with the calendar year figures of another country for 1921 or 1922? There is great variation also in the promptness and regularity of publishing statistics. In some instances it may be from one to two or three years before the trade returns are made available, thus greatly interfering with current statistical comparisons.

In general, the difficulties outlined above for import and export statistics apply to statistics of production, transportation, finance, and prices. The statistics of agricultural production, for instance, show great diversity of classification of commodities, grading, quantity units, and so on. Ultimate uniformity and comparability involve for their final success international uniformity in the grading of the great staple commodities of commerce. The variations now common between even the leading commercial nations in the grading of such materials as cotton, grains, and coffee must be remedied. They now lead to much confusion and annoyance in the daily conduct of trade.

II. How Greater Uniformity May Be Secured

The remedying of the difficulties described is not a simple task. It involves international cooperation of a high order, and such cooperation is generally difficult of attainment. Nevertheless, the insistent need for fuller and more

accurate trade information to guide business interests is so imperative and the recognition of the importance of securing greater uniformity is becoming so general, that hope may be entertained that a solution may be found.

Several attempts have already been made, or are being made, to improve the character of international statistics. Various organizations and agencies for compiling available statistics have been created. For example, the International Federation of Master Cotton Spinners' and Manufacturers' Associations—a federation of the associations of several countries—has for many years published semi-annual reports giving the number of active spindles and the stocks and consumption of raw cotton in all countries. The International Institute of Agriculture, in Rome, has for fifteen years issued statistics on production, stocks, prices, imports, exports, freight rates, and exchange rates pertaining to agricultural and livestock products which have been of great usefulness. The International Institute of Statistics at The Hague is now issuing a monthly bulletin giving international statistics on wholesale commodity prices, unemployment, cost of living, exchange rates, and banking statistics. The International Institute of Commerce, in Brussels, is also publishing a bulletin giving international statistics on production, prices, trade, banking, finance, navigation, freight rates, exchange rates, new capital issues, failures, and so forth. The monthly bulletin of the League of Nations assembles rather fully the available data on production, prices, trade, and finance. *The International Labor Review,* published by the International Labor Office at Genoa, gives monthly labor and price statistics. *The Survey of Current Business,* recently established by the Department of Commerce of the United States, and the *Federal Reserve Bulletin,* issued by the Federal Reserve Board, give a limited amount of international production and trade statistics, although these publications are primarily concerned with statistics of domestic conditions.

These publications are limited in their usefulness, however, by the fact that the fundamental government statistics from which they must, for the most part, obtain their data have only limited comparability, and they therefore fail, of necessity, in giving business the fullness of information demanded. A recent questionnaire sent to business houses and associations by the American Section of the International Chamber of Commerce clearly indicated that American business men are finding the publications listed above of limited usefulness, largely because of the incompleteness and lack of comparability of much of the data, as well as the lack of promptness in the publication of the data.

As a result of the work of the International Statistical Congress, in 1913, at Brussels, a convention was signed by twenty-nine nations providing for a classification of commodities to be used in summarizing trade statistics for comparative purposes. The United States was not a party to this convention, but since 1919 the Bureau of Foreign and Domestic Commerce has finished a summary of United States imports and exports according to the Brussels plan. While a step in the right direction, the Brussels classification does not solve the question. It provides a uniform classification for summarizing trade statistics, but it does not provide for a uniform classification for collecting statistics. It does not make the statistics comparable and the summarization under the plan can do nothing toward making compari-

sons fundamentally trustworthy. It does not reach the heart of the matter. Furthermore, the classification is an inelastic, non-decimal one, little adapted to meeting the changing conditions and the varying needs of business. Nor does it give the details necessary to make it of practical use to business men.

The Council of the League of Nations has set up an international statistical commission to consider the whole question of international statistics. The commission is charged with the general problem of recommending means by which the collection, coordination, and publication of statistics may be improved, but has as yet made no definite recommendations.

Other steps also have been taken by government officials. For example, as a result of cooperation between Norway, Sweden, and Denmark, an inter-Scandinavian system of commercial statistics has now been drawn up in which the inequalities in the commercial statistics of the three countries have been smoothed out to fit a common standard. The Imperial Statistical Conference, which met in London in 1920, considered the question of centralizing and harmonizing the statistical services for all the member nations of the British Empire. A plan for the formation of a central statistical bureau for the Empire was adopted. Its establishment, however, awaits the action of the several governments within the British Empire.[6] Such steps are helpful, but more general action must be secured.

III. Statistical Activities of The International Chamber of Commerce

The International Chamber of Commerce has more recently undertaken on a large scale the study of the problem of improving international business statistics. At the organization meeting of the International Chamber in Paris in 1920, and again at the London meeting in 1921, resolutions were passed urging that steps be taken "toward the adoption of international uniformity in the classification of statistics and the methods of determining the values and the quantity units used in their recording." The Council of the Chamber has appointed an International Committee on Statistics that is now attempting to formulate a plan that the organized business men of the world can recommend to the various governments; for it is upon government statistical organizations that we must depend for much of our basic statistical information.

The American Section of this committee has recommended the adoption of a classification of commodities somewhat similar in method to the new classification used by the U. S. Department of Commerce in collecting export trade figures. This classification, built upon a decimal scheme, allows almost infinite variety of expansion and change, while at the same time it insures permanency in the main headings and groups. A scheme of classification that will bring about greater uniformity must meet the needs of business and at the same time provide for the statistical requirements of each government. Under the plan proposed the details shown by any country can vary widely from those of another country, but comparability of main groups and commodities remains possible. The plan proposed by the American Section, like the plan now in operation in the Department of Commerce for United States trade statistics, provides the necessary elasticity. Classifications need not be identical in detail, but they must be so arranged as to allow

[6] R. N. Coats, *Improvements in British Empire Trade Information*, Annals, Am. Acad. of Pol. & Soc. Science, Mar., 1921, p. 153.

comparability in the main groups and in the universally important items of commerce. The decimal plan also lends itself to the adoption of mechanical methods of tabulation.

Another method of securing better and more uniform international business statistics through the medium of the International Chamber of Commerce is being worked out, with much promise of accomplishment, by the American Section of the Committee on Construction of the International Chamber.[7] In brief, this plan would extend the method used by some trade associations in the United States in securing data from their members for use of the trade, to all countries and arrange for interchange of the information between countries. The American Committee has adopted a plan that has already been put into operation in the United States by the Associated General Contractors of America—an institution composed of 1,200 important construction concerns—by which statistical data on production, stocks, labor conditions, transportation, prices, and so forth, of interest to the construction industry, are secured, analyzed, tabulated, and published for distribution to members and other organizations interested both in the United States and foreign countries. Some of the data for this service are secured directly from the members of the Association; other data are based upon the usual sources. Through the members of the Construction Committee representing the other twenty-six countries in the International Chamber of Commerce, the American Section is attempting to build up similar services in other countries—the data collected in all countries being according to a uniform plan—and to bring about an exchange of these services through the headquarters of the International Chamber in Paris. Although no other country has as yet instituted a similar service for exchange with the United States, the scheme is receiving favorable consideration. It suggests an interesting possibility by which business statistics of great value to various trades may be secured on a uniform basis by business interests themselves. Its ultimate value and success, however, must rest to an important degree upon the accuracy, completeness, and comparability of trade and production statistics collected by government agencies, since only government agencies can collect much of the basic data required.

[7] The details of this method have been secured from Mr. Noble Foster Hoggson, Hoggson Bros., New York, chairman of the committee.

IV. Conclusion

If agreement can be reached on methods and general outlines of commodity classifications, the most important step toward securing international uniformity will have been taken. The task, it must be recognized, is a complex and difficult one and not to be solved in a day. However, with business men the world over recognizing the need, and with their organizations, both national and international, urging the necessary international cooperation, the movement for greater uniformity, already initiated, will be given an impetus that will sooner or later bring about its realization.

Modern business requires—demands—accurate and reliable information from all parts of the world. For many business activities, statistics of conditions within one's own country only, is far from sufficient. If there are difficulties in securing dependable statistics on domestic conditions (as there are) the task is far more difficult when international statistics are desired. To the

usual problem of obtaining dependable information at home, there are added, when international statistics are concerned, the problems arising out of differences in commercial units, in the use of terms, in languages, in methods of classification and valuation, in the degrees of completeness or incompleteness existing in the statistics of different nations, in the methods of collection, in the degree of accuracy employed, and so on. To take the statistics collected by many different nations and bring them together for comparative purposes in a great many cases, is now all but impossible. Even in those cases where the same terms are used and we believe we are making actual international comparisons, we are actually but unconsciously comparing things that are incomparable. For the current use of the business man in the conduct of his daily business, and for the interpretation of general world business conditions, there is urgent need for the establishment of greater uniformity in the collection of basic commercial statistics.

THE ORGANIZATION OF THE COPPER MARKET[1]

By F. ERNEST RICHTER

IT will be convenient to begin this study with a brief summary of some of the similarities and differences between the principal non-ferrous metal primary markets in this country. Of the large group of non-ferrous metals, only copper, lead, and zinc need be considered for our purposes. The most important resemblance between these three is that in general the refined raw product goes direct from the producer (or his sales agent) to the consumer or fabricator without the intervention of dealers and without the existence of a broad speculative market on a metal exchange. The second rough similarity to be noted is that selling is concentrated in a relatively small number of hands. Thirdly, a substantial amount of the immediate domestic consumption of each of the metals is confined to a relatively small number of primary users, although the degrees of concentration of buying differ as between the three metals. Fourthly, the products of the various producers are sold under brands, and in spite of a marked degree of homogeneity in the products of a given grade, and in spite also of the fact that because of this homogeneity a good deal of "shopping" can be and is done by buyers for metal requirements, there is still a certain amount of each metal bought by brands. This latter is less true of copper than of either lead or zinc; indeed, domestic buying of copper by brands is relatively unimportant.[2]

Among the differences between the markets of the three non-ferrous metals, there may be noted first the fact that the market for copper is far more international in character than that for lead and zinc; indeed, copper has one of the most international markets possessed by any commodity, basic or otherwise. The exports of copper from this country before the war, in competition with metal from all quarters of the globe, were normally equivalent to about half of the total output of American refineries from either domestic or foreign copper, and imports amounted to between a third or a fourth of domestic smelter production. Imports and exports of lead, except such as pass through the country for refining in bond, are ordinarily negligible, and in zinc, too, the movements in and out of the country are ordinarily much less important than in the case of copper. The second important difference between copper and the other two metals is that all but a very small part of the copper production is fit for any sort of use that may be required of it, although Lake copper may be slightly better suited to certain uses than electrolytic, and vice versa; while in the case of both lead and zinc the output is primarily divisible into two principal forms which are not

[1] This article will be concerned almost wholly with the market for primary (in the sense of "virgin") copper. For certain of the material I have drawn on the same sources as for a study made in 1920 for the Copper and Brass Research Association and never published or reproduced for general circulation.

[2] Brands play a more important part in European purchases of American copper.

competitive or in general capable of mutual substitution. Desilverized lead and soft lead occupy two quite different fields of consumption, and metallic zinc and zinc oxide are produced by different processes and serve generally quite different purposes. The various grades of metallic zinc, further, are much more nearly different commodities than are Lake and electrolytic copper. The third important difference lies in the fact that secondary copper is normally a larger factor in the copper market than is secondary lead in the lead market, and far more important than is secondary zinc in the zinc market. This is not merely because copper is a more expensive metal and its scrap therefore more worth while recovering, but also because a greater portion of the zinc and lead outputs is consumed in such forms as to be irrecoverable. The use by the paint industry of zinc pigments and white lead is the best example of this situation. All three of these differences will readily be seen as contributing to a more highly competitive condition in the copper market than in the lead and zinc markets, other things being equal.

The present relatively simple organization of the copper market is the result of a gradual evolution, and an outline of this evolution will serve as a background for a description of present conditions.

I. Early Development of Copper Market

The copper industry in this country may be said to date from the opening of the Lake district in Michigan, about 1845.[3] At that time England was the foremost copper-producing country and the chief copper market of the world. Most of the British copper was mined in Cornwall and Devonshire, but smelting operations were concentrated largely at Swansea, in Wales.[4] British copper ore had been sold to Swansea smelters from at least as early as 1726 at periodic "ticketings." These were meetings of the miners of a Cornish district, offering ore to the Welsh smelters. Prospective buyers, who had previously sampled the lots offered, and assayed their samples, wrote secretly on "tickets" offers for the desired lots and the president of the meeting then read aloud the bids and assigned each lot to the highest bidder therefor. The development of the smelters and favorable tariff legislation caused large imports of foreign ores for sale to and treatment at Swansea. Great Britain in time became not only the largest producer of copper but, despite many complaints by producers about assays, smelter deductions, and other matters, the principal purchaser, consumer, and distributor of the world. A considerable volume of speculation in copper later developed on the London Metal Exchange,[5] with trading in "brands" (that is, grades) such as "Chili Bars," "Best Selected" or "G. M. B." (Good Merchantable Brands), similar to trading in grades of wheat or cotton.

Now Lake copper has the simplest possible metallurgy (a fact more true even 50 or 75 years ago than today) and this and other factors made reduc-

[3] See J. D. Whitney, *The Metallic Wealth of the United States* (1854), pp. 248 ff.; Report, Comm'r Min. Stats., Michigan, 1880, *passim*.

[4] Details about the organization of the British copper industry in the 18th and early 19th centuries are taken from Francis Le Play, *Description des Procédés Métallurgiques Employés dans le Pays de Galles, etc.* (Paris, 1848), *passim*, esp. pp. 30 ff. and 390 ff.

[5] This Exchange developed in the 1860's. E. Noah, *Die Organisation des Kupferhandels*, in *Elektrotechnische Zeitschrift*, July 22, 1909. The corner engineered by the Secretan Syndicate in the late eighties led to a liberalization of the trading rules on the Exchange.

tion (smelting and refining) of Lake ores in this country, rather than shipment to England, not only possible but economically inevitable. For 20 years after 1845, England got but little of our copper, whether from the Lake or from the other districts that within that score of years began to produce. From what evidence the writer has been able to gather, it seems clear that in those days of small things, the miner typically took his ores or concentrates to the smelter and either sold them outright (in which case the smelter sold the product for his own account) or had them smelted for a charge and received his copper back; few mines owned smelters.

The opening of the Calumet & Hecla in 1866 marked a new era.[6] Within half a dozen years this mine (originally two mines) had become the dominant factor at the Lake. A tariff laid in 1869 on copper imports [7] effectually cut off foreign competition, and Lake copper which, until the late seventies, constituted each year more than 70% of the production of the country,[8] dominated the rather unsteady American market. A pool was formed in the middle seventies,[9] which sold abroad as well as at home the exquisitely pure Lake copper, with which no other copper in the world could compete for purity, and little other copper for price. Periodical pool sales were also made at home, and there was little real market in this country for primary copper, outside of these sales. Already at this time, the copper market had developed so that there was no place for such a speculative market as existed in England. For reasons that will appear later, this has been true ever since—a situation in striking contrast to the lively speculative market which has normally existed in England for the red metal. As a corollary, no large body of important dealers has ever developed in this country, in one of the most homogeneous of raw materials.

In the seventies and eighties, production by Arizona and Montana mines began on what was then a large scale, and due in great part to the new flood of copper from the far West, the Lake pool was dissolved. The decade of the eighties saw the entry into copper production of two of the most important factors in the industry. In 1881, interests affiliated with Phelps, Dodge & Company, traders and dealers in metals, bought the four-year old Copper Queen Mine at Bisbee, Arizona, and laid the foundation for the development of this firm as an important factor in the copper industry.[10] Other rich deposits were being opened up in the same Territory. In this period also the nearly deserted camp of Butte, Montana, which in the sixties had been a gold-placer camp, was revived by some rich silver discoveries, and soon operations at the Anaconda mine opened up fabulously rich copper deposits, to be followed by similar discoveries elsewhere in Butte.[11] Already in 1887 Anaconda was the chief copper-producing mine of the country and

[6] See Letters and Recollections of Alexander Agassiz, pp. 54 ff.; *American Journal of Mining*, 1: 322.

[7] 16 Stat. at Large, 274.

[8] Publications of the U. S. Geological Survey, esp. *Production of Copper in 1910*, p. 21, for early statistics.

[9] *Mineral Resources*, 1883, pp. 234, 238; 1883/4, pp. 353, 354; *Engineering and Mining Journal*, 18: 254, 318; 25: 405. We find this pool, nearly half a century ago, endeavoring to sell entirely directly to consumers and refusing wherever possible to sell to dealers.

[10] See James Douglas, *The Copper Queen Mines and Works*, in Trans., Instn. of Mining and Metallurgy, 1912-13, pp. 534 ff.

[11] Butte Folio, *Geological Atlas of the United States* (U. S. Geol. Survey).

Butte had outdistanced the Lake. The result of these events and of other discoveries in Arizona was a titanic struggle between the Lake, Butte, and Arizona for the supremacy of the American copper industry.

Into this struggle were injected two important technological advances.[12] One was the taking over by the copper industry from the iron industry of the bessemerizing process for the production of pig or blister copper from the matte of sulphide ores, and the other was the introduction of electrolysis as the ultimate process in the refinement of the great bulk of the copper output of the country. Until bessemerizing and electrolysis became general, a large part of American copper in one stage or another of reduction went to England for further metallurgical treatment[13] and therefore *for sale*. This was costly, for several reasons: the great expense of carriage, the wastes incidental to Welsh metallurgy as then practiced, and the dependence of American producers on British smelters and dealers. Bessemerizing or "converting" blew copper matte, containing 50 per cent of copper, more or less, up to copper pigs, 95-99 per cent pure copper, in one fairly simple operation,[14] and did away with several furnace processes. Electrolysis made possible a homogeneity and purity of final product which had never before been obtainable, except in the case of some of the Lake copper, for any substantial volume of production. Bessemerizing and electrolysis, if we may so say, wrote the Declaration of Independence from England, for the copper industry. Electrolysis, further, applied as it normally is to about seven-eighths of the refinery output of the United States, has brought about a standardization of copper such as would probably never have been possible with furnace-refining alone.

Now, how was the copper being sold, that had been and was going to England? When the rich ores or the matte were shipped, the pretty general custom was for them to be sold to the Welsh smelters at so much per unit; that is, so much per per-cent of copper content, frequently under a contract made by the large producers for delivery over a period of time.[15] As copper began to be exported more and more in metallic form, following the erection of increasing numbers of smelters and refineries, both in the West and on the Atlantic seaboard, the practice arose, at least with certain large producers, of selling copper on the basis of prices of certain English brands, such as "Best Selected" or "Chili Bars," just as the practice has prevailed on our cotton exchanges of basing quotations on a standard grade and allowing adjustments for deliveries of poorer or better grades.[16] (The results were probably generally unfair to Lake copper—that is, the difference in quality between Lake and inferior Chili bar copper was generally not reflected in the price spread; and the aggressive production policies of the big American producers were in no small degree to blame for this.)

[12] I do not overlook the notable improvements in milling and concentrating practice, in roasting and other pyrometallurgical technology besides "converting"; for the purposes of this study the two mentioned were the outstanding developments at the period under consideration.

[13] This appears from the character of the British import statistics given in the Annual Statement of the Trade of the United Kingdom with Foreign Countries and British Possessions, especially 1884 through the 1890's.

[14] For a while, at first, two operations were necessary. Blister copper today is about 99% pure.

[15] *Engineering and Mining Journal*, 35:262.

[16] *Idem*, 39: 135.

II. Developments up to the World War

The decade of the nineties opened up a new era for American copper marketing.[17] By the middle nineties we were producing more than half of the world's copper and gradually refining more and more of the output of our smelters; and in no year since then, with the probable exception of 1921, have the mines of the United States failed to account for over 50 per cent of the world output of the red metal. What with this circumstance and an accompanying increase of smelting and refining capacity, aided by metallurgical improvements, there was less and less reason for dependence on British interests, either smelters or dealers, for a market for copper. This was especially true since this same period marked the beginning of a tremendous development in the domestic electrical industry, including a great increase in electrical transportation and communication. There came about then a growing and permanent concentration of copper selling, both domestic and export, in the hands of a relatively small number of selling agents, most if not all of them controlling or affiliated with important producing properties, either mines or reduction works or both. By the end of the century, the "Big Four" of the copper market had already come into being, though one of them did not sell its own copper until later. These were the United Metals Selling Company, controlled by Amalgamated Copper Company (which is to say Anaconda) interests; the Calumet & Hecla Mining Company, Phelps, Dodge & Company, and the American Smelting & Refining Company (which at this time sold through United Metals). The three other important selling agencies of that time were the American Metal Company, Ltd., L. Vogelstein & Company, and Beer, Sondheimer & Company. At the beginning of the present century, United Metals was undoubtedly the largest single seller of copper. Later, the American Smelting & Refining Company, which from 1908 on sold its own output,[18] took the lead, thanks largely to the affiliation of its controlling interests with those of the new "porphyry"—more properly, disseminated-ore—mines which opened up in the first decade of the century, and with other mines, such as the Kennecott in Alaska, and several large South American mines; and thanks also to its large smelting and refining capacity, which brought copper to it for the final reduction processes. For 1916, the year before our entry into the World War, the *Engineering and Mining Journal* of January 6, 1917,[19] adapting from certain figures published by the Boston News Bureau, credited the following sales, in millions of pounds, to the agencies then occupying the primary copper field:

American Smelting & Refining Co.	1,046
United Metals Selling Co.	597
Phelps, Dodge & Co.	247
American Metal Co.	169
Calumet & Hecla	160
L. Vogelstein & Co.	160
A. Lewisohn & Sons	72
Beer, Sondheimer & Co.	30
Direct sales by 5 mining companies	124
	2,605

[17] I omit reference to the episode of the famous Secretan Syndicate of the late eighties, which, while interesting, has no important bearing on the evolution of the American copper market, even though it temporarily led to cooperation of producers.

[18] Annual Report of the Company for 1914.

[19] 103:29.

III. Changes Since the War

Aside from a quantitative difference, the principal change brought about by war conditions and post-war conditions in the copper industry was the formation in December, 1918, of the Copper Export Association, Incorporated.[20] This was an association brought into being under the permissive provisions of the Webb Export Act of April, 1918, of which the members were some fifteen or twenty of the principal American producers who desired to take advantage of the provisions of the Webb Act to cooperate in the exporting of copper. The membership of the Association included the four big selling agencies of the American Smelting & Refining Co., United Metals Selling Co., Phelps-Dodge Corporation, and Calumet & Hecla Mining Co., and included also the principal mining companies which sold their metal through these agencies, as well as other producers. Considering the fact that most of the foreign copper which came into the United States to be sold passed through one or another of these agencies, it may be said that membership in this Association represented control in one form or another of about 80-90 per cent of the primary copper in the New York market. No member of the Association is required to allot any specific portion, either maximum or minimum, of his production or sales to the Copper Export Association, but members do agree to sell all of their export copper through the Association.

The Association was formed, it will be noted, in the month following the Armistice. To no industry did the termination of the war mean more than to the copper industry. This was true, not merely because the capacity of the industry had been enormously expanded to meet the demands of the belligerents and could count on a normal peace-time demand far below the extraordinary military demands, but also because the end of the war meant that sooner or later all the important belligerents would have huge tonnages of copper and brass in raw or fabricated form to dispose of and dump on the market in competition with current production. If there was any industry, therefore, which needed to have both its domestic and foreign marketing operations handled as intelligently and effectively as possible, it was the copper industry.

By the end of 1920, the Copper Export Association and its members found themselves in possession of a quantity of copper that was becoming too unwieldy to handle without the assistance of financing other than through bank borrowings. Early in 1921, therefore, the Association floated a loan of $40,000,000 in serial notes, guaranteed by the several members of the Association and also secured by the pledge of 400,000,000 pounds of copper which, it was agreed, would be held out of the domestic market and used solely to make foreign sales. The Association is reported to have disposed of well over half of the 400,000,000 pounds, and perhaps by February, 1923, it will have paid off fully three-fourths of the $40,000,000 of notes. The Association ordinarily aims to sell for cash against documents, and the greater part of its sales are said to have been spot copper, but, subject to the agreement of the members interested, it occasionally arranges for export credits, and, at times, subject to the approval of its selling committee, it makes forward sales of metal.

The formation of the Copper Export Association represented, probably, the closest cooperation in the marketing of

[20] See *Comm. and Fin. Chronicle*, 107:2334 (December 21, 1918).

copper since the pools of the seventies and eighties and the stand made by some of the principal producers of copper in the late eighties against certain European interests after the failure of the famous Secretan syndicate. Cooperation was to go further, however, with the producers urged to it doubtless by the severe necessities of the post-war situation. This brings us to the second interesting development of the last four years. In 1920, two steps were taken. In the first place, the copper and brass industry, as represented by some two dozen of the largest copper producers whose product goes through the New York market, and about ten fabricators and manufacturers of copper and brass united to form the Copper and Brass Research Association. This body began operations with an extensive study of the copper and brass industries. It has since carried on research work into past, present, and possible future uses of copper, studies of other sorts, and a very large amount of educational work, through advertisements and otherwise, calling the attention of builders and other potential users of copper to the virtues of that metal, to the end that the field of consumption of copper may be made as broad and as permanent as possible. Then, at about the same time, the copper producers joined with the lead producers and the majority of the producers of metallic zinc to form the American Bureau of Metal Statistics. This organization receives and compiles figures of mine production and of producers' stocks and is probably furnishing copper producers the most accurate and complete monthly statistics under these two heads that have ever been available to them.[21] Prophecy about the copper industry is exceedingly hazardous, but the cooperation of the producers of a large part of the American output in sales efforts, and of the whole industry in at least the beginnings of the compilation of reliable statistical data is so far in advance of what has hitherto been accomplished in this industry, that the outlook for continued and perhaps increased cooperation is promising.

The third interesting development since the war in the organization of the selling of copper has been the transfer by the American Smelting & Refining Co., as of January 1, 1921, of its selling agency to the firm of Guggenheim Brothers. The Guggenheim family has almost ever since the foundation of the American Smelting & Refining Co. been a dominant force in its management. So far as personnel went, therefore, the change was probably negligible, and the incident is mentioned here only as a matter of chronicling an event and not because the event involved an important change in the aspect of the copper market. The Guggenheims are selling for most of the same producers as did the American Company, and probably their selling policies do not materially differ from those which were pursued by the American Company when it acted as its own selling agent. The latter, which has certain mining properties, is still selling its own copper, including such metal as is contained in ores it buys, as contrasted with such ores as it smelts and refines on long-term contracts.

A fourth item of at least passing interest that deserves to be mentioned here is the entry into the New York market of substantial amounts of African copper. During and after the war, the property in the Belgian Congo controlled by the Union Minière du

[21] The Copper Producers' Association, for a few years before it dissolved at the outbreak of the European War, was issuing very reliable monthly figures of American copper refinery output.

Haut Katanga, developed to such an extent that it is now one of the foremost producers of the world. From time to time lots of its copper are making the long trip to this country for refining and thus entering directly into competition with North and South American copper in this market, while some of it is doubtless later making the trip back to the Eastern Hemisphere for European consumption. The sale of the copper from this mine which comes to New York is said to be in the hands of the Nichols Copper Co.

The fifth, and in some ways the most interesting post-war change that has come about, has been the absorption of the American Brass Co. by the Anaconda Copper Mining Co. This step, which took place in January, 1922, represented the most important instance in the whole history of the American copper industry of vertical integration beyond the stage of production of raw refined copper. There have been other instances in the past, either of alliances of producers with manufacturers, or of a small amount of fabrication by producers, but they have been relatively quite unimportant as compared with the acquisition by the largest copper producer in the world of the business and properties of what has probably been the largest copper consumer of the world. Since the normal annual consuming capacity of copper by the American Brass Co. is in excess of the normal annual producing capacity of Anaconda, though probably not greater than the largest amount of copper sold in any one year by the latter's selling agency, the United Metals Selling Co., the step may be said to earmark at least the copper production of Anaconda and in essence to take it out of the general open market in the same way that 400,000,000 pounds of copper were two years ago earmarked for foreign sale by the Copper Export Association.

Other developments of the last half dozen years have been the reported acquisition[22] by the Anaconda Copper Mining Co. of a controlling interest in the Chile Copper Co., to which reference is made at the end of this article, the absorption by the American Metal Company of the Vogelstein selling interests [22] and the accretion of strength to the former thereby, and the entrance into the selling field of the Nichols Copper Co., which had until recently contented itself with being a refiner of copper, taking copper from Bisbee, Arizona, and from Phelps, Dodge mines elsewhere as the chief source of business. The Phelps, Dodge interests now refine their own copper and the Nichols Company has made connections, among others, with the Union Minière du Haut Katanga. Sundry producers have shifted from one selling agency to another since 1916, but this is a normal development and the details need not concern us.

IV. How Copper Is Sold

The selling agencies are reservoirs which receive for distribution four streams of primary copper:

(1) Copper from their own mines;[23]

(2) Copper in ores, mattes, or other forms which refiners have bought outright, at prices based generally on current prices as published in the *Engineering and Mining Journal-Press;*

(3) Copper sold for producers, on

[22] The business of L. Vogelstein & Co., Inc., was absorbed by the American Metal Co. (Ltd.) on January 1, 1920. Application A-5726 of the American Metal Co. (Ltd.) to list stock on the New York Stock Exchange, July 19, 1922.

[23] The term "own mines" includes the mines of parent companies (Anaconda's copper sold by United Metals Selling Co.) or those of totally owned subsidiaries (Copper Queen's copper sold by the Phelps, Dodge Corporation).

commission, on exclusive long-term contracts;

(4) Copper sold for producers, on commission, on orders covering specific quantities of the metal.

The chief causes determining the choice by producers of a selling agent would seem to have been and to be the following:

1. Identical or allied control;

2. The fact that the selling agent has previously smelted and refined the copper or is identified or affiliated with the refiner of the copper;

3. The fact that the seller has financed or otherwise aided the producer;

4. Friendly relationships, without actual financial alliance;

5. Sundry business reasons, such as particular satisfaction with selling policies and results.

In 1916, the first cause apparently accounted for the placement of sales of fully three-fourths of the total given in the table on page 200; probably the proportion is not greatly different today, in spite of such changes in alignment as have taken place. The principal sellers of copper at the present time are Guggenheim Brothers, United Metals Selling Co., American Metal Co. (Ltd.), Phelps, Dodge Corporation, Nichols Copper Co., Calumet & Hecla Mining Co., American Smelting & Refining Co., A. Lewisohn & Sons, and the United States Smelting, Refining & Mining Co. The great bulk of the copper sold by these agencies for others than themselves is sold under terms of long-time contracts with mining companies; much of the rest represents copper purchased in one stage or another of reduction. Characteristic of these contracts between selling agencies and producers of copper are certain features which were called to the attention of the stockholders of the American Smelting & Refining Co. in the annual report of that company for the year 1920. In this report the stockholders were advised of reasons for the termination of the copper sales agency by the company, and the provisions referred to appear in a statement by the Chairman of the Finance Committee of the company. Stockholders were told that the contracts provide that the company "shall use its best endeavors to secure the best going market price for the product, and shall guarantee the collection of sales; that the Copper Companies (in other words, the mining companies) shall have and receive the same net returns for its (sic) copper as the Smelting Company obtains and receives for its own copper and that out of all sales by the Smelting Company such pro-rata amount shall be assigned to each Copper Company as the amount of its copper bears to the total amount of copper which the Smelting Company then has for sale either on its own account or as agent for others.

"Stated otherwise, these clauses mean:

"(1) That the Smelting Company must sell its copper at the same price as the copper of other companies;

"(2) That it cannot sell more nor less than its pro-rata of the total amount;

"(3) That it must endeavor to get the best going market price for all."

Occasionally sales contracts giving the producer control over the time and prices at which his copper may be sold are made, but these generally cover specific transactions and are not long-term agreements.

V. The Purchase of Copper

So much for the selling of copper.

Who buys the copper and how is it bought?

The coincidence of the assumption by this country in the nineties of the position of producer of more than half of the world's copper and the beginning of real strides in the electrical industry has been alluded to above. Prior to the inauguration of the electrical age, the main uses for copper—especially after the passing of copper-bottomed wooden ships—were military, ornamental (generally as brass) and in coinage. The electrical industry in its various phases, including power and light, telephones and telegraphs, and other uses, more than any one influence or factor has made possible, and been made possible by, the sustained and increasing large production of copper by the mines of the United States and the mines elsewhere under control of American copper interests.

No data that are both adequate and reliable, especially for long series of years, are available showing the consumption of copper by industries. The following table, compiled from figures of the U. S. Geological Survey,[24] shows the proportions of the forms in which copper was cast in American refineries

	Percentage		
	1921	1920	1919
Wire bars	61	53	55
Ingots	20	27	25
Cakes	12	13	8
Cathodes	2	2	7
Other forms ...	5	5	5
	100	100	100

for either domestic or foreign consumption in the years 1919, 1920 and 1921, according to the records of the Survey.

Wire bars are bought principally by drawers and manufacturers of wire; ingots are used primarily in brass making. These two forms in each of the years accounted for about 80 per cent of the copper cast. Mr. Joseph Clendenin, of Guggenheim Brothers, is authority for the statement[25] that "in pre-war years about 54 per cent of our domestic shipments of refined copper was in the form of wire bars, which affords a rough index of the electrical consumption."

In an article by President C. F. Kelley, of the Anaconda Copper Mining Co., approximations are given for the consumption of copper in the principal industries for 1919 and 1920. A table in this article assigns less than one-half of the consumption of each of these years to the combined consumption by electrical manufactures, telephones and telegraphs, and wire (not included elsewhere).[26] The table, however, has two items of "miscellaneous" uses and manufactures exported, which together in each of the years account for about a third or a quarter of the total. It seems probable that a substantial part of this miscellaneous item could legitimately be assigned to the electrical industry as such. About one-quarter of the total domestic consumption is assigned to the four industries of automobiles, shipbuilding, railways, and building.

In what has been said about the selling of copper, emphasis has been laid on the concentration of the sales in a few hands. Buying of raw refined cop-

[24] *Mineral Resources:* 1919, vol. 1, p. 601; *Copper in 1920,* p. 502; *Copper in 1921,* p. 280.

[25] *Engineering & Mining Journal,* 113: 131 (January 21, 1922).

[26] "Present and Future of the Copper Industry," in *Mining and Metallurgy,* February, 1922, pp. 9 ff. A table on p. 29 of the *Year Book of the American Bureau of Metal Statistics for 1921,* giving estimated consumption of copper in the United States, is identical in most of the items with the table in Mr. Kelley's article. For 1921, the *Year Book* credits the three forms of consumption by the electrical industry mentioned in the text with about 60% of the total 1921 consumption.

per is also, to a very considerable extent, closely concentrated, though manufacturing consumers of copper are numbered by the scores. This situation has resulted not merely from the large size of some of the principal consumers, but also from an evolution in buying methods. The five or six principal buyers of copper doubtless together account for half or more than half of the annual domestic consumption of the metal, and probably a list of the twelve leading buyers would represent 75 or 80 per cent of domestic consumption. The American Brass Co. is the only one of these for which figures of copper consumption have been made public, and of this company we learn [27] that "when operating at capacity, it uses in its manufacturing operations an amount of copper and zinc in excess of the total producing capacity of the Anaconda Co., which at present is approximately 300,000,000 pounds of copper, and 100,000,000 pounds of zinc per annum." In so far as any of these leading buyers does not fabricate products which it sells, it could, of course, leave to the fabricators the purchase of the raw material as well as the working-up of it into the finished product. The custom has evolved more and more, and naturally enough, for the large companies to buy the copper required for their needs, either spot or for future delivery, and have the metal shipped to the fabricators and pay them simply the working-up charges. The extreme homogeneity of refined copper has made this possible. A company with large financial and other resources should naturally have a greater advantage in trading with the large selling agencies (or, as occasionally, with small dealers) than would a large number of smaller fabricators, each perhaps entering the market whenever it received an order covering only a few hundred thousand pounds of copper. A consumer with a capacity of 50,000,000 or 100,000,000 pounds a year not only has a better trading position both because of its size and because it is more likely to be able to estimate fairly closely its requirements for the next six or twelve months than a smaller company manufacturing on order; it also has the resources that enable it to buy ahead whenever copper looks cheap and probably, often, has enough elasticity in its functioning to permit it to stay out of the market temporarily if copper looks dear.

The domestic market-place for copper may be said to be the telephone, except to the extent that personal conferences in the offices of the principal producers or consumers, in lower Manhattan Island, may take the place of telephone conversations. With conditions of both sales and consumption what they are, the producers and their sales agents have in general eschewed dealers or "second hands" and dealt directly with primary consumers. This is not to say that dealers do not exist or that they must rely solely on secondary or scrap copper for the means of trading. From time to time, producing interests have been known to get rid of some of their copper to dealers, and at times, of course, overbought consumers find it convenient to unload a surplus on dealers. Dealers' copper is frequently a real menace in a sensitive, thin market, and may at times for brief periods be price-determining, with the keen "shopping" that goes on. As for exchange dealings, while copper is among the commodities on the list of the New York Metal Exchange, the Exchange is but a nominal market for the red metal,

[27] Application A-5586 by the Anaconda Copper Mining Company, January 17, 1922, to list stock on the New York Stock Exchange.

lacking completely as it does the support of producers and sellers of copper. It may be in point here to quote—without assuming responsibility as to the nice accuracy of the statement!—a remark of Mr. J. H. Lang, of the sales department of the American Metal Co.[28] Treating of non-ferrous metals generally, Mr. Lang wrote: "It is safe to assume that Noah provisioned the Ark with less bickering and haggling than goes on in New York every day over a few tons of copper."

VI. The International Copper Market

The international aspect of the market for American copper is similar to the domestic aspect, in so far as direct selling by the great American selling agents is the rule. Before the war, at least a half-dozen principal agencies had affiliations or agents abroad through whom they placed export sales. Of course, the control of the market in European countries was and is shared with production of non-American copper, and the proportion of direct sales to consumers was and is probably much less than in this country. In London, the Metal Exchange, while stripped of much of its importance of former years as a regulator of world copper prices, still functions, and copper is dealt in there both for cash and for future delivery. The Exchange is by far the most important European speculative market for copper. In spite of the fact that before the war Germany was the largest consumer of copper outside of the United States, all efforts to establish dealings on an important scale in copper on exchanges in Berlin and Hamburg proved rather futile; and in Germany, as elsewhere, the product of American copper refineries, probably shipped largely on order, has been the principal source of supply of the red metal.[29]

Since the formation of the Copper Export Association, that body has, of course, been the principal exporter of copper from this country. Some of the important producers are not members of the Association, but the membership does include the very great bulk of American copper refinery production; and since its members agree to sell no copper abroad except through the Association, and since, apart from any other copper the Association has had, the 400,000,000 pounds which it specifically pledged in 1921 was to be devoted solely to export purposes, the overshadowing importance of this Association in the export field is clear. The Association, like the individual selling firms before the war, has maintained agencies and affiliations abroad and has shipped moderate amounts of copper abroad on consignment in order that it might be able to fill orders promptly.

VII. Divergences of Interest in Copper Industry

In the foregoing discussion, reference has been made to the lack of harmony or divergence of interests in the copper industry. What are the principal bases for these divergences? They have not merely been those of ordinary competition in the sense that A's interest is always to sell A's copper, while B's interest is to sell B's copper. The battles of the eighties between the Lake and Butte

[28] From an article, "The Marketing of Tin", in *Engineering and Mining Journal-Press*, 114:630, October 7, 1922. It may be remarked in passing that Mr. Lang's company has probably more pure trading activities and proclivities than any of the other large copper sales agencies.

[29] For German attempts before the war to achieve greater independence in copper dealings, see Reinhardt, *Die Kupferversorgung Deutschlands und die Entwicklung der deutschen Kupferbörsen*, pp. 54-100, *passim*. Copper is still quoted and traded in on exchanges at Berlin and Hamburg, but as price-fixing markets these exchanges have little or no significance.

furnish perhaps the best example of a straight-out fight. There is, of course, still a difference of interest between Lake copper producers and electrolytic copper producers, especially since, as has been pointed out, the two types of copper are so nearly alike that, while Lake normally commands a premium for certain uses, it can generally be said that one sort of copper is as good as the other. At least by the nineties, one other important basis for different points of view had emerged, and this was the difference between the company whose stock or control was closely held and the company whose stock was widely traded in on exchanges and about whose operations there was, therefore, much wider and more speculative public interest. A company in the latter class would be more likely to be dominated by aggressive policies of production and therefore of marketing than a company whose owners were few in number and were not interested in market prices of their stocks. Then, there has been the difference between old established, steady producers, on the one hand (whether or not close corporations), like Calumet & Hecla, Anaconda, the Phelps-Dodge coppers, or the United Verde Copper Co., and the lusty new "porphyry" coppers, which at least for the first half-dozen years of their lives strained every resource to produce more and more metal to reduce unit costs. This has perhaps been the most important single divergence of interest in recent times, but with even these "porphyries" now in a class of settled producers, this factor has less weight than formerly. It probably remains true, however, that increased production does more per se to reduce unit costs of the low grade mines than of the properties mining higher grade ore which possess a certain elasticity, to the extent that they can increase production either by mining more rock or by selecting higher grade rock.

Next, there has been divergence in interest between mining companies as such and smelters and refiners as such and, as a corollary, lack of harmony of interest between companies chiefly concerned with the sale of their own copper and companies depending largely on custom ores or copper for the metal at their disposal as selling agencies. The annual report of the American Smelting & Refining Co. for 1920, contains a statement by Mr. Joseph Clendenin, then Vice-President of the company in charge of metal sales, which bears on the subject of the buying of copper and the relation of sales agencies to the market for unrefined copper, on the one hand, and refined copper, on the other hand. It gives primarily, of course, the smelter's point of view. Speaking of "the so-called 'buying movements' which have grown up in the trade, by which within a few weeks the consumers have frequently bought their copper requirements for several subsequent months," Mr. Clendenin says:

"This procedure, from the viewpoint of the Mining Companies, has many advantages, but has worked to the disadvantage of this Company. The Mining Companies are satisfied and, in fact, anxious to avail themselves of these buying movements to sell large quantities and for far future delivery. Having done so, the Agency has felt obligated to maintain its price and so protect its customers. The Company has been tied in on these sales and must hold the same position. Following such periods of buying, there is a stagnant market and the Company must by its contracts of purchase take in from day to day such copper as is tendered it in ores at the quotation of the day, and usually on a declining market. It is thus in the attitude of having to buy without freedom to sell on a declining market—a position of great uncertainty and hazard in that the next buying movement starts on a lower level of price than

has prevailed in the intervening period. It might be said that the law of averages would take care of such situations, and it probably would, but there is another contract condition that requires the Company to have the Mining Companies' copper ready for the market, and if it can be sold it must be delivered and accounted for within a specified number of days after receipt at smelters. Any tie-up of the metal at smelters, or in transit to refineries, or at the refineries, must be taken care of by the Company,—this condition accounts in large measure for the burdensome stock the Company is now carrying."

Finally, there has been at times and still is an urge to production on the part of those mines which have outstanding rather large bond issues. Interest charges have to be met on these issues, while mere dividends on stock do not have to be paid, and this fact has undoubtedly played a part at times in causing production to be pushed, especially in the early stages of the development of a property. Here it is interesting to note that at the present time perhaps the greatest menace to stability and strength in the copper market from the supply side is coming from the large output of South American and Alaskan mines, and the most important bond issues outstanding today in the copper industry are those of the Chile Copper Co.; the Cerro de Pasco Copper Co.; the Braden Copper Co., operating in Chile; the Kennecott Copper Co., which is in Alaska and which controls the Braden; and the Anaconda Copper Mining Co. which controls the Andes Copper Co. (not yet, to be sure, a producer) and other South American properties.

Other causes of divergent interests might be mentioned, such as the varying points of view of the sales agency which goes in for trading activities and the agency which is concerned solely with selling its copper, but they have on the whole had less weight than the above, and some of them are at the present time non-existent or of relatively small importance. The foregoing indicates clearly the principal reasons other than those based on personal differences or legal battles, which have for the copper industry complicated the struggle that normal competitive conditions might have been expected to bring about.

VIII. Statistics in the Industry

One result both of the divergent interests in the copper industry and of certain other factors has been the lack of official collection, for any considerable period or periods of time, of current statistics for the industry as a whole. The Copper Producers' Association, from 1909 until the middle of 1914, published monthly figures of the output of American copper refineries, whether domestic or foreign copper.[30] Until 1920, these compilations represented, so far as the writer is aware, the only statistics collected officially or released for publication by the industry.[31] Other available monthly figures, whether of production, sales, or stocks, have been the result of efforts of the *Engineering and Mining Journal* or other papers, weekly or daily, to present as close an approximation as was possible under the circumstances to accurate statistics in this field. At present, the work of the American Bureau of Metal Statistics, alluded to above, is furnishing the producers the best current figures of copper production and stocks that have ever been made available to them. Whether or not the Bureau will later be able to collect equally good current statistics in the field of consumption remains to be seen.

[30] The Association was dissolved in January, 1915. *Engineering and Mining Journal*, 99: 209.

[31] The monthly totals of domestic mine production now being collected by the American Bureau of Metal Statistics appear in the *Monthly Survey of Current Business*.

The most homogeneous, reliable series of monthly average prices of primary refined raw copper is that of the *Engineering and Mining Journal-Press* and its predecessors, and *Mineral Industry*, which go back to the early sixties. Needless to say, this series, which is quotational in character, and does not pretend to be a weighted average of sales prices, is not equally representative of actual market prices throughout the whole of its extent, but it is probably, for most of the period covered, as good a series as we possess of average copper prices. Through 1898, the series relates to Lake copper only; since the beginning of 1899, to electrolytic, which, since 1915, is the only grade quoted on a monthly average basis. The *Journal* has had the means of current access, week by week, to as authoritative information on prices and price quotations for refined copper as anyone else; and for many years custom smelters have purchased ore from mines, and often refineries have bought matte and blister copper, and paid for the copper contents on the basis of current prices as given in the *Engineering and Mining Journal*. In the 1920 report of the American Smelting and Refining Co., to which reference has been made above, we find the following statement, which reflects this practice in the industry: "Now the Smelting Company's main and primary profit in respect of copper comes from its smelting and refining business, in which it buys the copper in ores, mattes and blister copper, for which it pays the current quotation as published in the *Engineering and Mining Journal* at the time of the purchase. The tonnage of copper thus purchased is now (November 26, 1920) averaging approximately 5,000 tons per month, and has been as high as 8,000 tons."

IX. Conclusions

The foregoing review of the development of the copper market during three-quarters of a century leads to the query as to the probable future development of marketing methods and organization in the industry. We have seen that at least as early as the Lake pools of the seventies and eighties sellers were endeavoring to deal directly with consumers and to avoid so far as possible the intervention of a body of dealers in the market. We have seen also that no broad speculative market has ever developed in this country, and that the dominating position of American copper refiners in the international market has brought it about that in Europe also, despite the existence for many decades of the London Metal Exchange, and in spite of the competition of American with non-American copper, European primary consumers normally depend primarily on the great American selling agencies for the bulk of their requirements. We have noted that in the American market both selling and buying are concentrated for the most part in relatively few hands, but that despite this, or because of it, competition is keen and selling policies, like production policies, are far from uniform. The exigencies of the post-war situation have apparently done more to bring about a reasonable amount of cooperation in the industry than all the ups and downs of the preceding half-century.

If writers in and out of the industry have alluded to the lack of harmony in the production and selling end, they have also had much to say about the greater ability of the European buyers as compared with American buyers in the matter of timing purchases correctly. How valid this criticism is, it would be difficult to say. It is true,

however, that a study of the statistics shows that on the whole before the war the foreign buyer showed better judgment in timing purchases than the American consumer. In years of low prices for copper, the foreigner has been much more ready to take advantage of the situation and buy ahead for his requirements than the average American consumer. Will the next development in the copper market take the form of such increased cooperation on the part of domestic consumers within the limits permitted by law as will enable them, through the collection and judicious use of statistical data or otherwise, to interpret the market better than they have frequently done in the past? [32]

One hesitates to predict whether the precedent set by the Anaconda Copper Mining Co. in absorbing the American Brass Co. will lead to other examples of vertical integration in the industry. In the case of the Anaconda, with its large producing capacity of copper and zinc, and the large consuming capacity of the Brass Company, and with certain other factors that enter into the situation, the "conjunktur," as the Germans would say, was peculiarly favorable. How much "shopping around" for fabricating plants to take care of output has been or will be done by other producers, it is impossible to say; but certain it is that many possibilities of vertical combination have been looked into and carefully studied. If the movement were extended on an important scale, there might result significant changes in the aspect of the market outside of the agencies tied up to fabricators. It must be remembered, however, that apart from the American Brass Co., some of the most important primary purchasers of copper are only partially fabricators, and this should be taken into account in any endeavor to determine the probable effect of further instances of integration.

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[32] As this is being written (December, 1922), the press reports arrangements by which the Anaconda Copper Mining Co. would secure a controlling interest in the great Chile Copper Co., the largest developed copper mine in the world. While this is an extremely interesting and significant piece of news, it does not represent an essentially new type of organizational development. It differs in degree rather than in kind from other instances of horizontal combination that the copper industry has afforded. Indeed, the Anaconda and its former parent, the Amalgamated Copper Co., have been foremost among the large copper producers of the United States in securing interests in other producers of the metal outside of Butte, Montana. Not less than a dozen years ago the Amalgamated became possessed of 100,000 shares of Greene Cananea Copper Co., operating in Mexico, and later increased its holdings. A few years later the Anaconda secured an interest in the Inspiration Consolidated Copper Co., a large disseminated-ore property in Arizona, and by a series of transactions culminating in 1914, the Anaconda also took over the properties of the International Smelting and Refining Co. with copper smelters in Utah and Arizona, and also, incidentally, a lead smelter and lead refinery.* Furthermore, as it has been noted above, the Anaconda controls the Andes Copper Co. and its affiliations, an important development in Chile. While, therefore, no radical departure from past precedents is involved in a control of Chile by the Anaconda, the importance of the step in putting the latter in a more dominant position than it has hitherto held in the copper industry must not be overlooked. Press commentators have referred to the step as completing the formation of a "United States Steel Corporation" in the copper industry. This is perhaps a bit of an exaggeration, but certainly the acquisition of control of the Chile Copper Co., following the purchase of the American Brass Co., would put the Anaconda in a position more nearly approaching that of the United States Steel Corporation than has ever been held by an organization in the copper industry. One may indulge in interesting speculation as to whether the expansion of the Anaconda is a forerunner of horizontal combinations among other groups of producers. With this the present article has little direct concern.

* For some of the details of these operations the reader is referred to an article by the present writer, "The Amalgamated Copper Co.: A Closed Chapter in Corporation Finance," in the *Quarterly Journal of Economics*, for February, 1916.

THE READJUSTMENT OF RETAIL AND WHOLESALE OPERATING EXPENSES

By CECIL E. FRASER

THE necessity for the readjustment of operating expenses during periodic changes of the business cycle is indicated by a study of the figures on the cost of doing business, collected in various wholesale and retail trades. Out of every dollar received from the sale of merchandise in 149 department stores scattered throughout the United States, the amount spent for operating expenses increased from 25.7 cents in 1920 to 27.7 cents in 1921, while net profits decreased from 1.7 cents to 1.3 cents during the same period. Similarly in the case of 43 representative firms engaged in the wholesale grocery business, out of every dollar received the amount spent for operating expenses increased from 9.3 cents in 1919 to 12.3 cents in 1921, while a net profit of 2.2 cents in 1919 changed to a net loss of 2.3 cents in 1921. A study of the records of wholesale and retail trades shows that on a rising market the proportion of operating expenses to net sales tends to remain the same, but that on a falling market this proportion tends to increase rapidly. On a rising market gross margin and net profit increase, but on a falling market gross margin decreases and the net profit frequently changes to a loss.

When prices decline after a period of prosperity, therefore, a merchant frequently finds that his operating expenses are out of line with his volume of sales,[1] and that in addition he has large stocks on hand on which he must take a substantial loss. When the volume of sales increases during a period of prosperity, not only do selling prices rise, but also wages, rents, and other items of expense tend to do likewise. At this time a merchant frequently feels called upon to expand his salesforce, to buy new equipment, and perhaps to increase the size of his store. Furthermore, he is often tempted to place larger orders than normally, not only because of the increased volume of business, but also because of the longer period which must elapse between the placing of the order and the receiving of the merchandise. When a depression sets in, sales slump, prices drop, and stocks must be depre-

[1] "Looking at the business cycle broadly, one of its prominent features is the revision and readjustment of operating expenses that it necessitates. In a period of prosperity, when selling prices are rising and the volume of sales increasing, wages, rents, and other items of expense almost inevitably tend to rise. In any one business, some items of expense usually rise faster than selling prices, while other expenses lag behind. The normal relationship between industries and trades, which are buying each other's products or competing for raw materials, transportation space, labor, and credit, also is upset. The result is that eventually the balance between costs and prices is gravely disturbed. "After the peak of prosperity is passed, sales slump and a rapid drop in prices occurs in most industries. The falling off in revenue necessitates downward readjustment of operating expenses through curtailment of production, through the increased efficiency of employees, through the introduction of more economical methods of operation, or perhaps through actual reductions in wage rates, rents, and other items of expense. Pending the outcome of such readjustments, the profits of the business are jeopardized." "The Readjustment of Operating Expenses," by Professor Melvin T. Copeland, in the *Review of Economic Statistics*, October, 1921.

ciated, although operating expenses tend to continue at a higher level.

This was substantially the experience of many wholesale and retail merchants during the past four or five years. During 1917, 1918, and 1919, prices rose with comparative rapidity; it was a period when high wages permitted customers to buy higher priced merchandise than they had ever purchased before. Many merchants were forced to raise wages because of the increase in the cost of living and the competition for labor and to increase the number of their employees, not only because of increased business, but also because of the lower efficiency of the individual employee. Larger than normal orders were placed with the manufacturer and wholesaler because deliveries were slow and because frequently these orders were only partially filled. When prices fell in the first half of 1920, many merchants had heavy stocks of goods to liquidate and large payroll and other expenses to meet. During 1921 and 1922, therefore, the essential problem of these merchants has been to maintain their volume of sales and to adjust their operating expenses to lower price levels.

The change in a merchant's operating expenses and merchandising policies during a change in the business cycle is of significance not only to the merchant himself but also to the manufacturer who sells goods to that merchant. In the marketing of products for general consumption the wholesaler and retailer serve as the usual outlets; their success, therefore, is of primary importance. If a manufacturer permits his merchants, or, as is often the case, induces them to overstock at the peak of high prices, he slows up their rate of stock-turn and frequently makes it necessary for them to reduce their selling prices below cost in order to move their merchandise during the depression which follows. In this manner he adds to their cost of doing business, not only because of the extra advertising and sales effort required to move obsolete stocks, but also because of the increased carrying charges. In order to lessen the severity of business depressions in the future, manufacturers should exercise more caution about permitting their retail merchants to purchase abnormally large stocks of goods on which losses eventually must be taken. A manufacturer, therefore, should study the problems that confront these merchants in order to adjust his sales and credit policies in accord with the actual conditions.

The records of the past three or four years show that the prosperity of merchants depends on two major groups of factors: (1) the facility with which operating expenses are adjusted to changed conditions, and (2) the merchandising policies which determine the rate of gross margin.

I. What Are Operating Expenses?

In analyzing records of expense during the ups and downs of business prosperity, it is essential that uniform methods of keeping these records be used. This is true from the standpoint of one analyzing results extending over a period of years as well as those of a single year. Because of lack of uniformity in keeping these records both merchants and public have been the victims of much confusion and misunderstanding as to the costs of doing business in the wholesale and retail trades. When asked the percentage of his operating expenses it is often found that one merchant will say 9 per cent, while the proprietor of a similar store across the street may say 22 per cent. Obviously, the first merchant is not in-

cluding as an expense the same items as the second merchant. In collecting figures on the cost of doing business, it has been necessary to devise a standard profit and loss statement for each wholesale or retail trade in which an investigation has been made, in order to secure figures which are complete and comparable. For most retail trades these statements which are filled out by the individual merchants are classified as follows:

Selling Expense.
Delivery Expense.
Buying and Management Expense.
Fixed Charges and Upkeep Expense.
Miscellaneous Expense.
Losses from Bad Debts.

In order to secure statistics that are fully comparable for different stores, rent is included in the profit and loss statement as an expense, whether the store is owned or leased, and the business is charged with a salary for the proprietor. If the owner were not occupying the building himself, he could secure rent from someone else. The amount to be charged to expense as rent, therefore, is determined by what would be a fair rental for the building. Likewise, a proprietor should charge his business with a salary, for if he were working for an outsider he would be assured of this amount of income. The amount that should be charged as an expense under this head, therefore, is determined by what the proprietor could earn if employed by someone else. The proprietor of a small store has the same justification for charging his salary as an expense as has a large corporation in charging as an expense the salary of its general manager. Often this salary must be prorated between buying, selling, and management. If the proprietor spends one-half of his time selling, and one-half in buying the merchandise and managing his store, one-half of his salary should be charged to "Wages of Salesforce" and the other half to "Buying, Management, and Office Salaries."

The proprietor is entitled to charge his business with interest on his own capital the same as for capital borrowed, for if he had made a conservative loan of his money instead of investing it in his business he would have been assured of income from this source.[2] To arrive at the amount on

[2] Suppose that a man has $20,000, owns a building which might be used for store purposes, and is himself capable of commanding a salary of $40 a week. He can, if he wishes, invest his $20,000 in conservative bonds which will yield him a safe percentage of interest. The building which he owns he can rent as a store for whatever it will bring. He can, furthermore, go to work for some firm and earn $40 a week. Under these circumstances, why should this man go into business for himself, invest his $20,000 in stock and fixtures, use the building which he owns for a store, and go to work for himself, unless he can get a larger return than he would get from the interest on the $20,000 invested, the store rented to someone else, and his own salary as an employee of another firm? When he goes into business for himself and invests his own money, he is taking certain risks. The mortality in all retail trades is high. The man is running a chance that he will lose money. Why should he risk his time and money if he is not going to get something more than he could have by playing wholly safe and not taking any risks? In other words the net profit of a business is something more than the salary a man pays himself, the interest on the money that he has invested, and the rent of his own store. Net profit is a reward for undertaking the risks of engaging in business and for putting forth the extra managerial effort that is required of a proprietor. If this were not true there would be little incentive for men to engage in business on their own account. The point is that in order for the merchant to know surely that he is getting his reward for undertaking the risks of business, he must charge, as expenses of that business, interest on his own money invested in it, rent for the store which he owns, and a salary for himself.—Bulletin No. 27 of the Harvard Bureau of Business Research, *Operating Expenses in Retail Jewelry Stores in 1920*, pp. 14-15.

which interest should be paid, it is necessary to determine the net worth, which is the sum of the assets less the sum of the liabilities to outsiders. From the net worth, real estate should be deducted, inasmuch as the return on real estate has already been covered in rentals. The rate of interest charged on this amount is determined by the ordinary rate on long-time conservative investments in the locality in which the business is situated.

Net profit, which is the gain obtained from engaging in business over and above the gain which would have been obtained if the capital, store building, and proprietor's time were employed by another in a conservative business enterprise, cannot be calculated, therefore, until charges for rent, proprietor's salary, and interest on capital owned have been deducted. While the treatment of these three items is most frequently the subject of controversy, there are innumerable differences of opinion on handling other expenses. Because of the different methods of financing and operating a retail or wholesale business, comparable figures cannot be obtained unless these expense items are uniform. It is only through the use of standard classifications of accounts that it is now possible to make an accurate analysis of the changes that have taken place in the cost of doing business during the recent changes in the business cycle.

In addition to variations in the accounts themselves, there also have been variations in figuring percentages of operating expense. Some merchants use the cost of merchandise sold as a basis, while others use net sales. Although it should make comparatively little difference which method is used, as long as the merchant figures his mark-up, expense, net profit, and other items on the same base, less confusion usually results if these percentages are figured on net sales. Not infrequently a small retailer buys an article for 75 cents which he intends to sell for $1.00. He determines rightly enough that this gives him a mark-up of 33⅓ per cent on cost. Then he figures that his operating expenses are 25 per cent of his net sales, and, forgetting that he has shifted his ground, he concludes that he is making a net profit of 8⅓ per cent. As a matter of fact, with the best luck he can only break even, and if later a mark-down is necessary, or his expenses increase, he will be forced to take a loss. It is for this reason that the Harvard Bureau of Business Research bases all its percentages on net sales as 100 per cent.

Although it is obvious that there are numerous firms whose business is not covered by these trade investigations of the Bureau, the figures received come from representative stores scattered throughout the United States. Frequent tests made by comparing the common figures of these identical stores with the common figures of a much larger group of stores indicate that these samples are representative of the trade as a whole.

Footnote 2 continued from page 214:

Inasmuch as interest on the investment is included in expense, net profit is defined, for the purposes of this study, as the amount that remains over and above all expenses, including the salary of the proprietor or partners, rent of the store, whether owned or leased, and interest on the firm's net investment as well as interest on borrowed money. It is to be noted, however, that federal and state income taxes are not included in expense before net profit is determined, but are rather a deduction from the net profit. Thus, net profit is not defined in this bulletin as a return on the investment; it is rather the amount which accrues to the owners of the business from especially good management and occasionally through fortuitous circumstances. It is the primary incentive which induces men to engage in business on their own account rather than to accept employment and lend their capital to others.—Bulletin No. 33, of the Harvard Bureau of Business Research, *Operating Expenses in Department Stores in 1921*, p. 30.

The results of these studies, therefore, may be taken as a picture of the actual conditions existing in the different retail and wholesale trades and as an indication of the prevailing tendencies.

II. Operating Expenses on Rising and Falling Markets

A study of the records of shoe stores, jewelry stores, department stores, and wholesale grocers shows that the ratio of operating expenses to net sales tends to remain constant on a rising market and to increase substantially on a falling market. On a rising market, gross margin and net profit increase, but on a falling market, gross margin decreases to such an extent that with an increased percentage of operating expenses a merchant frequently suffers a heavy loss. Apparently there is a failure on the part of most merchants to increase their rate of stock-turn appreciably during periods of prosperity. For purposes of comparison, common figures for identical stores in the shoe, jewelry, department store, and wholesale grocery trades are given in Tables I, II, III, and IV.

The situation in the retail shoe trade is shown by the statistics in Table I. The amount of money paid for operating expense out of each sales dollar received in 73 identical retail shoe stores increased from 25.2 cents in 1918, and 24.9 cents in 1919, to 26.3 cents in 1920, and 28.3 cents in 1921. The largest single item of this expense was the wages of the salesforce. Out of every dollar received, the proprietor of the average retail shoe store in this group paid to his salesforce 8.2 cents in 1918, 8.4 cents in 1919, 9.5 cents in 1920, and 10.4 cents in 1921. Salaries and wages were at their height when the sharp drop in prices occurred. Many merchants failed to readjust their operating expenses; they frequently tried to maintain their force of employees. As sales fell off, therefore, the percentage of wages increased.

Table I. OPERATING EXPENSES AND PROFITS IN RETAIL SHOE STORES

73 Identical Firms

(Net Sales = 100%)

	1918	1919	1920	1921
Wages of Salesforce	8.2%	8.4%	9.5%	10.4%
Advertising	1.3	1.3	1.7	1.9
Buying, Management, and Office Salaries	4.7	4.6	3.9	4.7
Rent	2.7	2.3	2.4	2.9
Losses from Bad Debts	0.2	0.2	0.2	0.2
Other Expenses	8.1	8.1	8.6	8.2
Total Expense	25.2	24.9	26.3	28.3
Gross Margin	32.2	33.0	28.0	27.0
Net Profit or Loss	7.0	8.1	1.7	1.3*
Stock-turn	1.6 times	1.7 times	1.8 times	1.7 times

* Loss.

Table II. OPERATING EXPENSES AND PROFITS IN RETAIL JEWELRY STORES

35 Identical Firms

(Net Sales = 100%)

	1919	1920	1921
Wages of Salesforce	8.5%	9.4%	11.6%
Advertising	1.9	2.0	2.7
Buying, Management, and Office Salaries	4.9	5.5	6.3
Rent	3.7	4.0	5.8
Losses from Bad Debts	0.3	0.4	0.5
Other Expenses	14.6	13.4	16.2
Total Expense	33.9	34.7	43.1
Gross Margin	40.4	39.4	38.5
Net Profit or Loss	6.5	4.7	4.6*
Stock-turn	1.0 times	0.9 times	0.8 times

* Loss.

These expenses had to be paid out of the gross margin, which is the difference between the amount paid by the retailer for the shoes and the amount which he received from his customers. It might be expected on a rising market that as the rate of expense increased, the rate of gross margin would also increase because of appreciation of stocks of merchandise. Although the gross margin did show a slight increase from 32.2 cents out of each sales dollar in 1918 to 33.0 cents in 1919, we have the phenomenon of the gross margin decreasing to 28.0 cents in 1920 and to 27.0 cents in 1921 at a time when the percentage of expenses was increasing. This condition resulted from the fact that most shoe stores purchased larger stocks than their sales warranted in 1919 and the spring of 1920. As a result they were forced to take heavy losses on large inventories of shoes when prices fell. The taking of these mark-downs materially reduced the percentage of gross margin. In view of the large stocks which many manufacturers encouraged their retailers to buy, it is remarkable, not that a decline in gross margin occurred, but that it was so small. Although the average shoe retailer of this group showed a net profit of 7.0 cents out of each dollar received in 1918, and 8.1 cents in 1919, as a result of this decline in percentage of gross margin and increase in percentage of operating expenses, his rate of profit was reduced to 1.7 cents in 1920, and in 1921 he showed a net loss of 1.3 cents. During this period the rate of stock-turn increased from 1.6 times in 1918 to only 1.7 times in 1919. It was not until after prices fell in 1920 that the rate reached 1.8 times a year, and in 1921 it fell again to 1.7 times.

In the jewelry trade the situation was aggravated by the slow rate of stock-turn. The total expense of 35 identical jewelry stores increased from 33.9 cents out of each sales dollar in 1919 to 34.7 cents in 1920, and to 43.1 cents in 1921. During this time the wages of the sales-

people increased from 8.5 cents in 1919 to 9.4 cents in 1920 and to 11.6 cents in 1921. At the same time the rate of gross margin was diminished from 40.4 cents in 1919 to 39.4 cents in 1920, to 38.5 cents in 1921. As a result, the net profit decreased from 6.5 cents in 1919 to 4.7 cents in 1920, and in 1921 the average retail jewelry store in this group suffered an actual loss of 4.6 cents on each dollar of merchandise sold. The rate of stock-turn diminished steadily from 1.0 times in 1919, to 0.9 times in 1920, and to 0.8 times in 1921.

Although the same tendencies are evident, department stores showed a small net profit in 1921. One hundred forty-nine department stores reported that salaries and wages had increased from 14.1 per cent in 1920 to 15.1 per cent in 1921, and that the total expense had increased during the same period from 25.7 per cent to 27.7 per cent. This increase may have been due to aggressive selling to move obsolete stocks, as shown by the increased percentage spent for advertising. It may also have been due to a delay in the readjustment of salaries and wages to the decreased volume of sales. Contrary to the experience of the shoe retailers and the jewelry retailers, the gross margin of the department stores increased from 27.4 per cent in 1920 to 29.0 per cent in 1921, due in all probability to superior merchandising ability and better control of stocks and purchasing. The net profit, therefore, decreased only from 1.7 per cent in 1920 to 1.3 per cent in 1921, and the rate of stock-turn declined only from 3.4 to 3.3 times a year.

Table III. OPERATING EXPENSES AND PROFITS IN DEPARTMENT STORES

149 Identical Firms

Net Sales = 100%

	1920	1921
Salaries and Wages	14.1%	15.1%
Rentals	2.1	2.6
Advertising	2.1	2.4
Traveling	0.3	0.4
Losses from Bad Debts	0.1	0.2
Other Expenses	7.0	7.0
Total Expense	25.7	27.7
Gross Margin	27.4	29.0
Net Profit	1.7	1.3
Stock-turn	3.4 times	3.3 times

As might have been expected from the fact that the decline in wholesale prices preceded that in retail prices, the wholesale grocery trade showed some loss in 1920, while retailers were still showing a profit, and a greater loss in 1921. In the case of 43 identical wholesale grocers the total operating expenses decreased from 10 per cent in 1916 to 9.3 per cent in 1917; it remained fairly constant throughout 1917, 1918, and 1919; in 1920 it fell to 9 per cent, but rose to 12.3 per cent in 1921. The reduction of the total expenses from 10 per cent of net sales in 1916 to 9 per cent in 1920 was the result of a general paring down of almost all items, particularly of the wages, salaries, and traveling expenses of the salesforce. The percentage of salesforce expense, however, increased from 2.2 in 1920 to 3.1 in 1921 because of a marked falling off in sales. In 1920, when prices fell off, many wholesale grocers were caught with large stocks, particularly of sugar which they had purchased at the peak of prices; because of heavy reductions in prices, the gross margin decreased from

Table IV. OPERATING EXPENSES AND PROFITS IN THE WHOLESALE GROCERY BUSINESS

43 Identical Firms

(Net Sales = 100%)

	1916	1917	1918	1919	1920	1921
Total Salesforce (inc. wages and traveling expenses)	2.7%	2.4%	2.5%	2.2%	2.2%	3.1%
Other Wages and Salaries	2.6	2.4	2.6	2.7	2.5	3.5
Total Fixed Charges and Upkeep (inc. rent, taxes, insurance, etc.)	2.6	2.5	2.4	2.6	2.5	3.4
Losses from Bad Debts	0.3	0.2	0.2	0.1	0.2	0.3
Other Expenses	1.8	1.8	1.7	1.7	1.6	2.0
Total Expense	10.0	9.3	9.4	9.3	9.0	12.3
Gross Margin	13.3	13.5	11.5	11.5	8.2	10.0
Net Profit or Loss	3.3	4.2	2.1	2.2	0.8*	2.3*
Stock-turn (times)	6.0	5.9	5.2	5.0	6.3	5.1

* Loss.

13.5 per cent in 1917 to only 8.2 per cent. The average wholesale grocer in this group, therefore, showed a net loss of 0.8 per cent of his net sales in 1920. Although the gross margin increased to 10 per cent in 1921, the percentage of expense increased still more rapidly because of a falling off in net sales. As a result, the average wholesale grocer in 1921 showed a net loss of 2.3 per cent. The rate of stock-turn fell steadily from 6.0 times in 1916 to 5.0 times in 1919; in 1920 it rose to 6.3 times a year but fell to 5.1 times again in 1921.

III. Difference Between Large and Small Stores

There has been much speculation as to whether both large and small stores fared the same during the changes of business from prosperity to depression. Contrary to the popular belief that large scale operation affords the greatest economy, the figures indicate that in 1921, at any rate, large stores had a higher ratio of expense to net sales than the small ones.[3] The figures also indicate, however, that the merchants doing a large volume of business apparently were able to adjust their operating expenses and gross margin to changed conditions more readily than the merchants with a small volume of sales. More detailed examination of data for 1921, the year of greatest business depression is illuminating.

The widest variation in volume of sales occurred among department stores as indicated by reports from 301 different firms. The stores reporting a sales volume of less than $250,000 had a

[3] Bulletin No. 30—*Operating Expenses in the Wholesale Grocery Business in 1921.*
Bulletin No. 31—*Operating Expenses in Retail Shoe Stores in 1921.*
Bulletin No. 32—*Operating Expenses in Retail Jewelry Stores in 1921.*
Bulletin No. 33—*Operating Expenses in Department Stores in 1921.*
Harvard Bureau of Business Research.

total expense of 26.6 per cent, while the stores reporting a business of over $2,500,000 had a total expense of 28.5 per cent. The common figure for salaries and wages was lowest for the firms with a small volume of sales, as was the common figure for rentals and advertising. Taxes and interest, however, tended to decline as the volume of sales increased. The rate of stock-turn varied according to volume, the small stores turning their merchandise 2.2 times a year, while the large stores turned their merchandise 4 times a year. Supplies tended to increase with the volume of sales, although somewhat irregularly. In spite of the greater percentage of operating expenses, however, stores with a large sales volume showed a net profit of 3.1 per cent, while those with a small sales volume showed a net loss of .8 per cent. This was due primarily to the fact that the small stores had a gross margin of only 25.8 per cent as compared with a gross margin of 31.6 per cent of the large stores.

It does not follow from this that the larger stores were charging higher prices or were serving less efficiently than the smaller stores. Because of better merchandising policies and because of more efficient buying, these stores frequently were not forced to take as large mark-downs on merchandise still on hand at the end of the season as were the small stores. Furthermore, they often had in their employ more experienced merchandise managers, and other specialists. The higher rent figure of the large stores ordinarily indicates a more desirable and more convenient location than that occupied by the small stores.

In the retail shoe trade, the situation was slightly different. Reports from 407 representative stores indicate that although firms with a small volume of sales showed the highest common figure for wages of salesforce, the large stores showed the greatest total expense. This was due partially to the fact that because the large firms did the most advertising, they had the heaviest advertising expense in percentage of net sales. Delivery expense likewise was highest in percentage of sales for the large firms; in fact, a majority of firms with sales of less than $30,000 reported no delivery expense whatsoever. In contrast to the wages of salesforce, the percentage of buying, management, and office salaries to sales were higher in the firms with a large volume of business because of the greater amount of effort devoted to the stock records and more careful control of buying. This is demonstrated by the fact that the stock-turn in the small stores was but 1.3 times a year, while that in the large stores was 2.7 times a year. Rent in percentage of sales was higher on the average for firms doing a business of over $100,000 a year. Total interest was highest for firms with small sales; as might be expected, it varied inversely with the rate of stock-turn.

The reports from 190 different retail jewelers point to the opposite conclusion. Stores doing a business of less than $20,000 a year had a total expense of 47.1 per cent as compared with 40.6 per cent for the stores doing a business of over $50,000 a year. The difference probably results from the fact that the small jeweler is usually a repair man and has the artisan's rather than the merchant's point of view, as a consequence of which he is not an efficient merchandiser. Wages of salesforce were 14.2 per cent in the small stores as compared with 10.8 per cent in the large stores. Advertising, however, increased from 2.2 per cent in the small stores to 3.3 per cent in the large. Contrary to

the prevailing tendency among department stores and retail shoe stores, the rent for the small jewelry stores was 6.1 per cent as compared with 4.8 per cent for the large stores. Likewise the expenses for total fixed charges and upkeep were 20 per cent for the first group as compared with 14.4 per cent for the last group. These fixed charges are far greater than in the other trades. Gross margin for firms with sales of less than $20,000 was 35.8 per cent of net sales and for firms with sales above this amount it was 37.3 per cent. The net loss for firms in the first group was 11.3 per cent while the net loss for firms in the latter group was 3.3 per cent.

Compared to 1920, the wholesale grocery trade in 1921, as shown by reports from over 300 firms, reversed itself. In 1921 the firms with the smallest volume of sales had the lowest expenses, while in 1920 they had the highest expenses. Hence it is not at all certain that the 1921 figures are indicative of normal conditions. It would appear that the smaller firms have been able to readjust their expenses somewhat more rapidly than the firms with the larger volume of sales which had more elaborate organizations. The fact that salesforce expense was lowest with firms with annual sales of less than $500,000 in 1921, when this group had the highest salesforce expense in percentage of net sales in 1920, adds weight to this conclusion. In both years, however, the large firms had the highest percentage of gross margin and consequently suffered the lowest percentage of loss.

IV. Relation of Merchandise Policies to Operating Expenses

Reports of several of the larger stores in metropolitan centers indicate that the "buyers' strike" in 1920, at least in the large cities, was against prices and not against merchandise. The volume of sales of many stores in agricultural communities was curtailed, as was the volume of business done by stores located in the textile and other specialized industrial centers. The total sales of many stores in the metropolitan centers, however, which were not dependent upon a single industry and which reduced prices promptly in accord with the reduction in wholesale prices, increased in dollars and cents as well as in units. The break in prices came in the first half of 1920, but many retailers failed fully to depreciate their inventories until the latter part of 1921. This failure to depreciate stocks immediately was one of the main causes for the severe losses suffered by many merchants. Too often they attempted to put off this necessity in the hope that business would improve; as a result their sales fell off. When reductions were finally taken, they were so large that the gross margin between the cost of the merchandise and what was received for it was seriously affected. Although the statements of many merchants may have shown a profit in 1920, the indications are that only too frequently it was a paper profit which was more than offset by the loss in 1921.

A brief examination from this point of view brings out several significant facts, particularly in the retail jewelry trade. The average sales of 33 identical retail jewelers increased from $111,249 in 1919 to $115,739 in 1920, but fell to $100,467 in 1921. Average inventories at the end of 1920 were $84,107 as compared with $76,591 at the end of 1919 and $52,280 at the end of 1918. This increase in inventory was probably one of the reasons why these stores showed an average net profit of $5,148 in 1920. It may be

suspected that at least a part of this amount was a paper profit resulting from a failure to take mark-downs promptly, since these same stores were forced to take an average loss of $2,920 when they reduced their average inventories to $73,739 in 1921. It should be noted that while average net sales increased only $4,490 between 1919 and 1920, the average cost of merchandise sold increased $2,104, and the average total expense increased $4,101. Although the net sales fell $15,272 between 1920 and 1921, the average cost of merchandise sold decreased only $7,548, while the average total expense actually increased $344.[4] Another interesting fact in the jewelry business is that the December sales peak probably plays a more important part than in any other retail business. The demand for gifts is so great at Christmas time that a substantial portion of the year's business is transacted in the last month of the year. In 1920, for example, the common figures for 182 jewelry stores showed that 27 per cent of the year's business was done in December. It is this period of intensive buying on the part of the public that enables many jewelry stores to show a yearly profit in normal times or to reduce their annual losses in times of depression.

In the retail shoe trade, this general tendency is likewise conspicuous. The average sales of 76 identical retail shoe stores increased from $156,729 in 1919 to $173,994 in 1920, but the average net profit decreased from $12,070 to $2,630 during the same period. This decrease is accounted for by the increase of $17,788 in the average cost of merchandise sold, and an increase of $8,917 in the average total expenses. In 1921, although the average net sales were only slightly less than in 1919, the average inventory at the end of the year was $46,497 as compared with $54,053. The average total expense, however, was $4,820 greater than in 1919, and the average cost of merchandise sold was greater by $7,814. As a result, these firms showed an average net loss of $1,840 in 1921.[5]

Because of superior merchandising, department stores were able to increase their gross margin in 1921 and thereby show a net profit at a time when shoe and jewelry stores showed a loss. When the average net sales of 168 identical department stores decreased by $144,647 between 1920 and 1921, the average cost of merchandise sold also decreased $120,091, and the average total expense decreased $16,012. The average net inventory was reduced $21,873 between 1919 and 1920 and was still further reduced by $8,213 in 1921. Thus by reducing their average inven-

[4] Average Merchandise and Expense Figures for Retail Jewelry Stores (33 Identical Firms).

	1918	1919	1920	1921
Net sales	....	$111,249	$115,739	$100,467
Inventory at end of year	$52,280	76,591	84,107	73,739
Cost of merchandise sold	....	69,583	71,687	64,139
Total expense	....	34,803	38,904	39,248
Net profit	....	6,863	5,148	2,920*

*Loss.

[5] Average Merchandise and Expense Figures for Retail Shoe Stores (76 Identical Firms).

	1917	1918	1919	1920	1921
Net sales		$115,955	$156,729	$173,994	$155,453
Inventory at end of year	$35,610	40,741	54,053	52,896	46,497
Cost of merchandise sold		76,496	103,036	120,824	110,850
Total expense		32,103	41,623	50,540	46,443
Net profit		7,356	12,070	2,630	1,840*

* Loss.

tories, their average cost of merchandise sold, and their average total expense, these department stores were enabled to show an average net profit of $43,248 in 1921 when the average retail shoe dealer and the average retail jeweler were showing an actual loss.[6]

A contrast in the merchandising policies followed by different stores is shown by the attitude of two metropolitan specialty stores of about the same size from 1919 to 1922. In the fall of 1919, when manufacturers refused to guarantee delivery and frequently were unable to fill all their orders, the first store placed commitments for twice the amount of merchandise which it expected to sell during the coming season. It was induced to pyramid its orders in this manner because many manufacturers were filling only 50 per cent of the store's orders and because the railroad congestion caused merchandise to be delayed in transit. As a result of being forced to carry a line of credit with the banks and with several wholesalers and manufacturers the store's finances were strained. In the spring of 1920, when prices broke, the management took the attitude that prosperity would return within a short time and that it was foolish to reduce prices abruptly. As a result, slight reductions were made from time to time, but they were not sufficiently spectacular to attract customers, and sales fell off. Consequently, when the lowest point of the depression was reached and merchandise was the cheapest, this store had so little available cash that the management was afraid to place orders far in advance. The buyers, therefore, were instructed to adopt the hand-to-mouth policy in buying merchandise. The management of this store did what seemed to be the natural thing under the circumstances; in reality, however, it was indulging in speculation.

In direct contrast to this policy was that followed by the second store. The management of this store became convinced that prices were out of line throughout the fall of 1919 and the spring of 1920. Its buyers, therefore, were cautioned to place orders for only 25 per cent of their season's requirements, even though delivery was uncertain. These buyers spent a large part of their time in the New York market where they bought from hand to mouth and shipped the merchandise to the store by express. In 1920, when retail prices broke, this store displayed low-price merchandise in its windows when others were still displaying high-price goods. It depreciated its inventories and sent its buyers into the market to buy at low prices. As a result, its sales increased rapidly. This policy was continued until well into the spring of 1922, when buyers were instructed to order from 60 to 70 per cent of the season's demands because the management believed that prices were at rock bottom. Although this purchasing of large quantities of goods slowed up the stock-turn slightly, the store gained in appreciation on the merchandise and was in a strong financial position to take advantage of the change in the market. It is true that buying in such quantities could be done only on staple merchandise where the style element played little or no part, but this changing of its merchandising policy in accord with the change in the

[6] Average Merchandise and Expense Figures for Department Stores (168 Identical Firms).

	1919	1920	1921
Net sales	....	2,115,805	1,971,158
Net inventory at end of year	370,220	348,347	340,134
Cost of merchandise sold	....	1,487,160	1,367,069
Total expense	....	576,853	560,841
Net profit	....	51,792	43,248

business cycle enabled one store to forge ahead rapidly while the other lost ground.

Many of the same factors which became conspicuous in the retail trades also appeared in the case of wholesale grocers at a slightly earlier date. Although the average net sales of 42 identical wholesale grocery firms were $143,886 less in 1921 than in 1918 and the average cost of merchandise sold had also decreased by $125,534, the average total expenses increased by $45,364. This was one of the main reasons for the net loss of $29,073 in 1921 as compared with a net profit of $34,643 in 1918.[7] Although this loss was slightly less in 1921 than in 1920, it is evident that the wholesale grocery trade at this time had not fully solved its problems of readjustment to a period of lower prices and that expenses had not yet been brought into line with decreased sales.

V. Conclusion.

The important points which emerge from this examination of operating expenses in the various retail and wholesale businesses are: (1) the manner in which operating expenses tend to fluctuate closely with the sales on a rising market, as indicated by the small variations in the ratio of expense to net sales; (2) the sharpness with which the percentage of operating expenses to net sales rises on a falling market, as shown by the increases in these items in 1920 and 1921; (3) the decline of the percentage of gross margin to net sales in periods of inactive business because of competition on a price basis and the necessity for taking substantial reductions on inventories in order to move stocks; (4) the tendency of most merchants not to increase their rate of stock-turn in times of prosperity in order to reduce expenses and prepare themselves for periods of depression; (5) the failure of most merchants to take their losses immediately when prices started to swing downward and their failure to adjust their merchandising policies in accord with changes in the business cycle; and (6) the indication that the merchants with a large volume of sales were better able to readjust their businesses to the change from prosperity to depression than those with a small volume of sales as shown by a larger percentage of net profits or a smaller percentage of net losses.

What lessons can be drawn for future guidance from the experience of the past four years? Several merchants have found that they can curtail operating expense in anticipation of the depression. They have also found, however, that they cannot curtail expense too sharply without serious results to their businesses. The sweeping reduction of the wages of salespeople may injure the morale of the sales organization; a substantial reduction in the number of employees may curtail service to such an extent that the good-will of customers is impaired. It is not apparent,

[7] Average Merchandise and Expense Figures for Wholesale Grocery Business (42 Identical Firms).

	1915	1916	1917	1918	1919	1920	1921
Net sales	.....	1,339,429	1,677,429	1,902,181	2,293,756	2,585,295	1,758,295
Net inventory at end of year	181,762	213,970	279,670	347,873	391,870	368,299	271,729
Cost of merchandise sold	.....	1,157,903	1,445,749	1,680,456	2,008,435	2,363,894	1,554,922
Total expense	.....	134,464	166,265	187,082	231,834	254,614	232,446
Net profit	.....	47,062	65,415	34,643	53,487	33,213*	29,073*

* Loss.

furthermore, that a decrease in the volume of sales means that fewer salespeople can do the work, because with the reduction in the unit price more units may actually be sold, although the total sales volume is less. Hence, to maintain their volume of sales in dollars and cents some merchants have been forced to increase the number of salespeople required to handle the increase in the actual number of units sold.

The dangers of making reductions without careful analysis is illustrated in the case of a proprietor of a large shoe store who reduced the wages of his salesforce by 20 per cent. At the end of six months he found that his efficient salesmen had gone over to his competitors and that he had left only the drones. On the other hand, a wholesale grocer found that his salesforce expense had been higher than the common figure for the trade. Upon further investigation he found that the reason was not that he was paying too high salaries and commissions, but that his salesmen were poorly routed and that the average sales per salesman were too small. By remedying these difficulties he was able to reduce his operating expenses and increase his net profits. The studies of the cost of doing business have shown that in ordinary times in the other operating departments of most mercantile businesses, expenses can also be reduced. Despite qualifications, therefore, there appear to be opportunities for most merchants to introduce greater economies in anticipation of a business depression.

The adjustment of buying and selling policies to prices that will maintain a safe gross margin, but that will not be out of line with actual values, is another important point. The pyramiding of orders by many merchants during the winter of 1919, when they were carried away by the optimistic view of salesmen as to the continued upward swing of the market, resulted in heavy losses. The records of a number of stores indicate that it is not the placing of a high mark-up on merchandise which insures receiving a safe gross margin, but that it is careful purchasing which avoids subsequent mark-downs on large stocks. By increasing the rate of stock-turn, by taking losses as soon as prices start to decline, and by following the market down so that stocks are replenished with cheaper merchandise, the successful merchants have been able to maintain a sufficient gross margin to insure a fair net profit.

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THE DEPARTMENTS OF THE HARVARD BUSINESS REVIEW

THESE Departments presented in the REVIEW by the Student Editorial Board have been chosen with regard to their interest to business executives and to the possibility of utilizing most effectively the resources at the command of men engaged in advanced study of business management.

The first Department, "Summaries of Business Research," consists largely of summaries of the results of various intensive pieces of business research. Here, as in the Case Studies, effort will be made to diversify the subjects taken up for study so as to include material of value not only to the general executive but also to executives primarily interested in selling, production, finance, or control.

One of the outstanding characteristics of the Graduate School of Business Administration, the case method of teaching, has suggested the second of these Departments called "Case Studies in Business." It is the aim of the Board to present in the successive numbers of the REVIEW a series of problems of significance and of general interest in the various fields of business management, each with one or more possible solutions. Case studies are based upon the actual experiences of business concerns. Since the combinations of circumstances and the problems arising out of such conditions are of paramount interest, the frequent necessity of disguising names to avoid disclosure of confidential material does not alter the value of the discussions.

The last of the Departments will be devoted to current business literature. This Department is divided into two sections, in one of which are critical reviews of new books of interest to business men, and in the other, book notices and short descriptions.

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SUMMARIES OF BUSINESS RESEARCH

1. THE EXTENT AND SIGNIFICANCE OF THE RAILROAD CAR SHORTAGE

THE widespread shortage of railroad cars which started in the autumn of 1922 is one of the dominant factors affecting the revival of business prosperity. The significance of this shortage, consequently, should be realized by business men in planning their future operations.

Causes of Car Shortages

The car shortage in the autumn of 1922, although frequently attributed to the combination of extraordinary activity at the coal mines and to the extraordinary under-maintenance of railroad equipment during the shopmen's strike, is in reality attributable to a complex of circumstances of which those resulting from the strikes form but a single and not the most important group. The recurrence of the shortages six times during the past twenty-two years—in 1901, 1907, 1912, 1916-18, 1920, and 1922—indicates the permanence of the conditions giving rise to them. The cause underlying these six distinct shortages since the beginning of the century seems to be the failure of the railroads to provide the extra equipment to take care of peak load business.

The railroads' failure to provide sufficient equipment began during the decade 1900-1910, because of general financial distress resulting partly from the policy of the Interstate Commerce Commission in limiting freight rates while operating costs and charges increased. Then came the war and the period of federal control, when shortage of men and materials made it impracticable for the Railroad Administration to maintain the program of renewals. Inasmuch as freight cars have a life of about twenty years, they should be replaced at the rate of 5 per cent per year. This means, as there are some 2,400,000 cars on American railroads, that 120,000 cars should be added per year for renewals alone. This number, moreover, does not allow for increased traffic. During the two years of federal control, 100,000 new cars were ordered (50,000 per year), or less than half the normal requirements for renewals alone. In 1920 and 1921 the net earnings were so low as to preclude the possibility of correcting car deficiencies. In 1921 the roads earned but slightly over 3 per cent return on property value. Car orders, therefore, could be placed only by the strongest roads. In 1922, with a return of a little more than 4 per cent on property value, the financial situation was easier, and more roads have been ordering additional cars. Nevertheless, the roads are so far behind with their equipment purchases that some time will be required to take care of the neglected renewals.

This failure of the railroads to provide for normal renewals and the increased need of freight cars is indicated by the chart on the next page which also shows the effect of their under-maintenance during the recent depression and shopmen's strike. Until 1920 the curve showing the number of available cars, excluding cars in bad order, was closely correlated with the curve indicating total cars owned, because of the

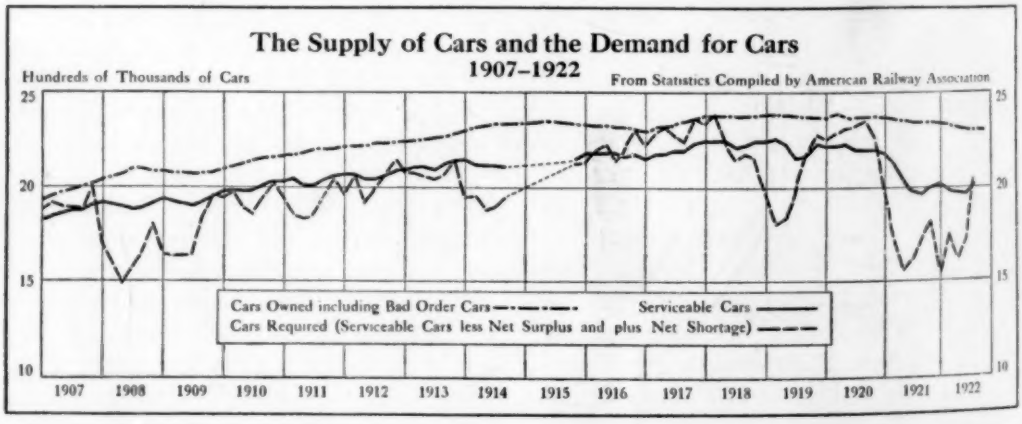
relatively slight deviations in the percentage of bad order cars; but in 1921 the retrenchment policy of the railroads brought the number of available cars to the lowest figure reached since 1910. This wide difference between cars owned and cars available existed for six months before the shopmen's strike was called, a fact suggesting that the enforced economies of the railroad managements, rather than the strike, were responsible for the development of the car shortage after only a moderate recovery of business had taken place in the fall of 1922.

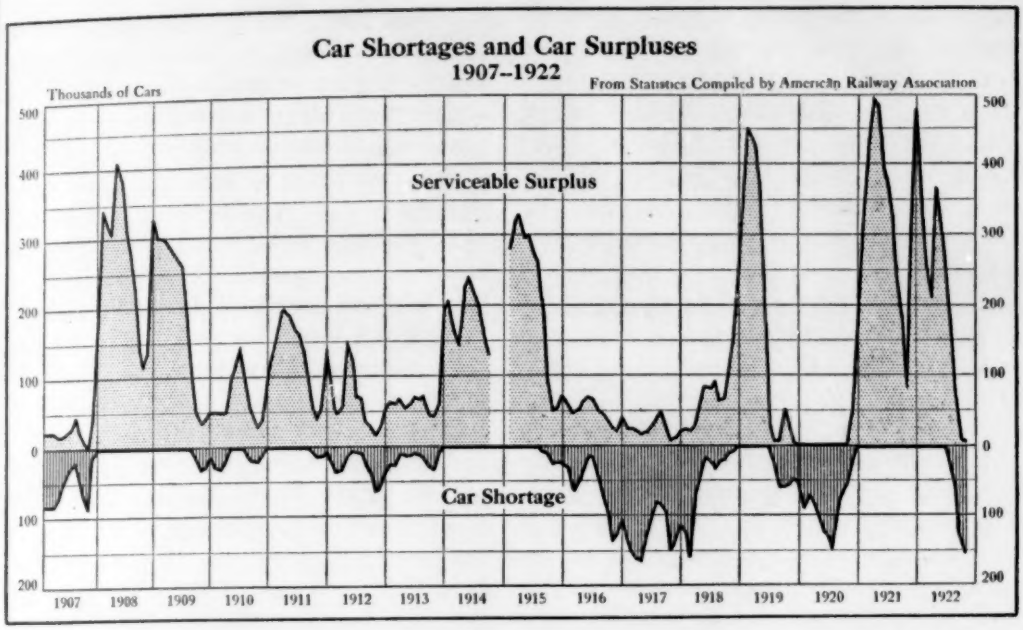
Extent of Car Shortages

The periodic alternation of car shortages and car surpluses is indicated by the chart on the opposite page. By their very nature car shortages are intermittent. They could not become chronic, for, if the supply did not become adjusted to the demand, traffic would be diverted to other lanes. The appearance of shortages is closely related both to seasonal influences and to the effects of the business cycle on the demand for transportation. In the fall, which is the busiest season of the year, idle cars are reduced and a condition arises which, if it does not result in a car shortage, at least reduces the available cars a considerable margin below the number on hand during the summer. An examination of the chart shows that in fifteen of the sixteen years charted, idle cars were less, or the shortage more acute, in the fall than in the remainder of the year. The single exception came in 1918. In that year the car shortage was greater in the spring, as a result of the continuation of the acute shortage of the preceding fall.

As in the crop season, so in a period of cyclical activity transportation is more in demand, and again the number of idle cars falls and a shortage is apparent or at least imminent. The four periods of shortage actually noted on the chart, as distinguished from those where the surplus car balance was merely diminished, correspond with the periods of great expansion in 1907, 1916-18, and 1920, and with the less active period of prosperity in 1912-13.

The extent of the total deficiency in car service arising from these several causes may be roughly gauged by the curves on the chart below comparing available cars with car requirements, and by the numerical car shortage figures plotted on the chart on page 229. According to the latter chart, the numerical car shortage in November, 1922, was the largest ever existing





on American railroads. This net shortage of 170,000 cars exceeded the maximum of 150,000 cars reached during the 1919-1920 car shortage, which in turn exceeded the maximum net shortage of 140,000 during the war. The progressively increasing severity of these three shortages during the last six years indicates the increasing discrepancy which developed during this period between the peak demands and the maximum carrying capacity of the railroads.

The actual significance of these statistics for shortages is difficult to measure. When a shortage is imminent, manufacturers begin to order in excess of their needs and, where fortunate enough to have access to more than one railroad, duplicate car orders. The actual excess of demand over supply, therefore, should be somewhat less than the figures indicate.

Because of an uneven distribution of cars, shortages are often local in character. This situation makes possible the coincident existence of a car surplus and a car shortage as indicated on the above chart. The existence of a surplus may conceal the fact that locally a shortage may be very acute. There was an inclination on the part of the Middle West to blame the East for retaining more than its share of the rolling stock during the shortage in the fall of 1922. In the light of the reports of the American Railway Association, there was apparently some ground for this criticism. These reports show the following percentages of box cars in excess of ownership held by the various roads in October, 1922:

Eastern roads, 69.6 per cent more cars than they owned.

Southern roads, 41.8 per cent more cars than they owned.

Western roads, 12.0 per cent less cars than they owned.

Such a distribution in favor of Eastern roads is more or less inevitable in periods of peak demand, because of the fact that Eastern roads are terminal roads.

On the other hand, car shortages existed at the time throughout the entire country even where there was a large percentage of cars belonging to roads of other districts on the lines of local roads, as is shown by figures of the American Railway Association for the week of September 15, 1922, as follows:

Eastern roads...29,185 cars short
Southern roads..24,343 cars short
Western roads..28,430 cars short

Results of Car Shortages

Production is handicapped by the inadequacy of transportation facilities. Curtailment occurs in some industries both because of the impossibility of securing raw materials and because of the lack of facilities for delivering the finished product. In many cases production is maintained, but at an increased cost. This condition may result from the increasing of manufacturing stores to prevent shutdowns and from the making up of time lost during shutdowns by overtime work. Examples of expensive production were numerous during 1920. The substitution of motor truck transportation for the normally cheaper rail movement of commodities reached such an extent that automobile tires were so transported from Akron, Ohio, to Rhode Island, a distance of about 800 miles. Lastly, there are widespread losses of perishable products resulting from shortages, such as those occasioned in 1922 to the Pacific fruit growers.

Aside from their importance in the control of shipments, car shortages exercise a direct influence upon the financial conditions affecting business. Through the normal operation of the law of supply and demand, a prolonged car shortage inevitably must tend to raise the market price of the commodities most affected. At the end of such a period the conditions are reversed, and the sudden increase in the marketable supply must depress their price as they are dumped on the market.

Another cause of loss is found in the fact that deliveries attempted after a car shortage has abated often are refused. The manufacturer, therefore, is left with an excess of finished goods at an inflated inventory value, just at the time when perhaps, as in 1920, a business break is about to come. He is then confronted with the necessity of liquidation at prices below his costs.

The effect of a shortage on credit conditions is often serious. As soon as the normal flow of goods is checked, the flow of remittances in the opposite direction is also reduced. With income curtailed, businesses are unable to meet their obligations and must be carried by the banks. A tightening in money is the result. This condition was clearly manifested in the fall of 1922 in the wheat belt. Light marketings of wheat retarded the flow of new crop money into the Middle West. Extensions of maturing farm loans and of new borrowing were reported to assist in holding the wheat until it was possible to move it to the markets where it might be sold. The lack of ready money on the part of the farmers and the consequent curtailment of their expenditures reacted upon the merchants in that territory, who experienced a period of dull business and in turn felt the need for bank credit. Some alleviation in the credit strain, however, was evidenced in a lessening of demand for funds in the grain and milling industry, since many such concerns were forced by the car shortage to cease operations entirely.

Car shortages have a bearing on the cyclical movements of business. In times of activity, a shortage of cars and

the resulting delay in delivery encourage the pyramiding of orders by manufacturers, wholesalers, and retailers. Duplication is resorted to in the hope of obtaining deliveries on a part of the orders placed. An over-extension of demand results which, together with speculative buying, tends to develop fictitious shortages of merchandise. Producers of goods, unduly encouraged by the sudden increase in the demand for their products, accelerate production, and business takes on a feverish activity. Prices are inflated as the inability to fill orders increases, and credit is subjected to strain in caring for the abnormal changes in business conditions. The conditions created by the shortage of 1922 favor the development of such a situation, which will intensify the activity of business developing in the normal course of the business cycle and render the subsequent depression more acute.

In times of great depression the car situation is of little significance, because business is practically at a standstill and because there is no probability of using railroad facilities to capacity. A shortage just after depression, however, tends to retard the recovery and causes losses that can ill be afforded by exhausted enterprises. Thus the 1922 shortage worked great hardships in the Middle West, where in one state 170 elevators were closed because of inability to get cars.

Since the production of coal is dependent to a large degree on the ability of the operators to make shipments from the mines, a car shortage is a serious limiting influence on the amount that can be made available to the consumer. The resulting scarcity of coal, furthermore, is a factor deterrent to business activity, since coal is essential to production in so many industries. The inadequacy of coal cars to meet the peak of demand in the fall and winter, however, is not wholly undesirable. Many consumers realize that prices increase when production, handicapped by the seasonal shortage of cars, cannot supply demand and are induced, therefore, to adopt the desirable expedient of laying in a reserve supply in the spring and summer. As a result this out-of-season ordering tends to level out the production peak. Although the number of available coal cars is now insufficient, too great an addition to transportation facilities, by encouraging the seasonal character of the demand, would cause an unfortunate increase in the seasonal nature of the industry.

Remedies for Car Shortages

In discussing remedies for car shortages, it must be borne in mind that it would be uneconomical to obviate a certain amount of car shortage existing at the peak of business activity. The chart on page 229 shows the extended duration of car surpluses and reveals the large amount of capital invested in railroad equipment which has been idle for considerable periods in the past. An addition to our railroad facilities sufficient to take care of all possible transportation needs of the country would increase greatly the carrying charge on this investment during times of less extended activity and create an investment expense to be borne eventually by the shippers or the general public.

It is of interest to note, in passing, that the problem is not peculiar to the United States. Prior to the war, coal car shortages regularly occurred on the state railroads of Prussia. Political pressure upon the State Railroad Administration to increase its coal carrying equipment was met by the statement of the Government that from the na-

tional point of view, because of the burden of carrying charges during the nine or ten months when the cars would be idle, it would be unwise to provide cars sufficient to meet the maximum demands of the period of peak load business.

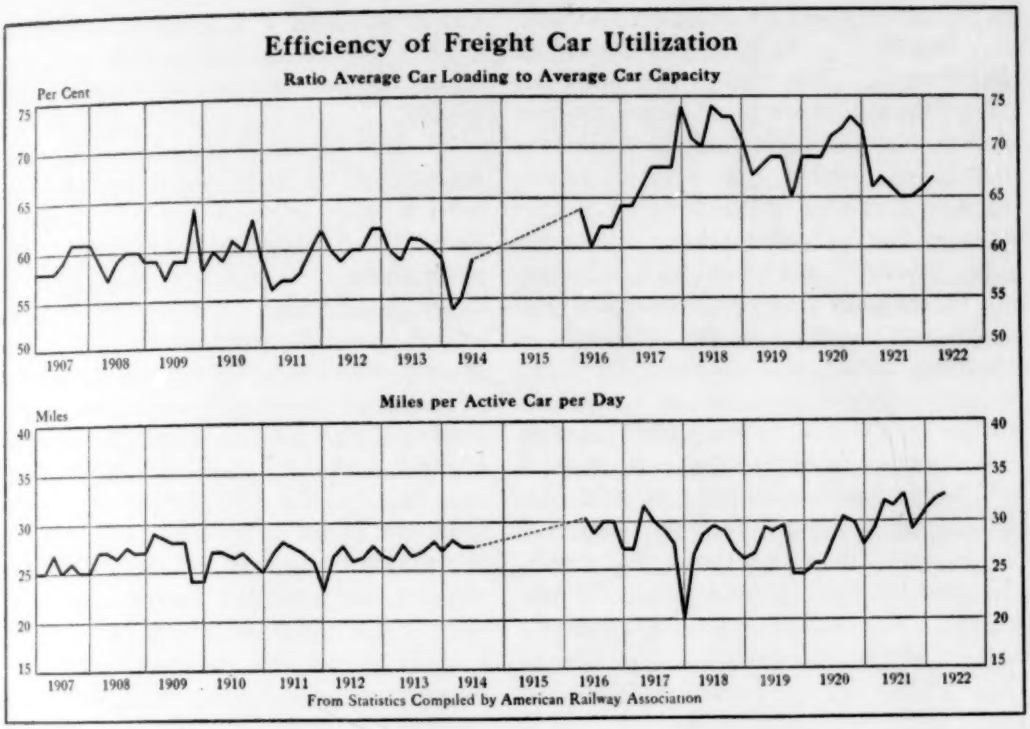
The deficiency of cars is indicated by the following table, which lists the carrying capacity of cars on United States roads at various dates since 1907, excluding cars in bad order not available for use:

	Tonnage of Available Cars (million tons)	Cars in Bad Order (%)
June, 1907	63	5.5
June, 1908	65	10.5
June, 1909	67	7.5
June, 1910	71	7.1
June, 1911	74	8.2
June, 1912	76	8.0
June, 1913	81	7.0
June, 1914	83	8.7
June, 1915	85	8.7
June, 1916	89	5.7
Dec., 1916	89	5.4
Dec., 1917	90	5.2
Dec., 1918	91	5.8
June, 1919	87	8.3
Dec., 1919	90	6.2
June, 1920	91	7.1
Dec., 1920	90	7.9
June, 1921	82	14.6
Dec., 1921	83	13.1
June, 1922	82	15.2
Sept., 1922	83	12.6

The under-maintenance in the past two years is seen to have reduced the tonnage of available cars to a figure only as large as that provided by the roads in June, 1914. Assuming that the number of bad order cars can be reduced to 6 per cent of the total, and such an attainment seems possible inasmuch as the Railroad Executives' Association recently set for themselves an objective of 4 per cent, the available carrying capacity will be ninety million tons. This represents an increase, however, of only 6 per cent since June, 1915, whereas during the preceding seven-year period, when car shortages were negligible, 35 per cent was added to the country's car capacity. To make up for the failure to maintain this rate of increase during the war period, approximately half a million cars with an aggregate capacity of 25,000,000 tons would have to be constructed.

Pending the construction of a number of cars somewhat approaching this figure and the preparation of facilities to handle them, some slight amount of increase in transportation service may be derived by more efficient use of existing equipment and facilities. The possibilities of attaining this higher degree of utilization by heavier loading of the individual freight car and by its more rapid movement are indicated by the chart on the opposite page which points out the development in these directions during the past fifteen years.

Heavier loading of cars, as indicated by the chart, is coincident with periods of car shortage, such as 1907, 1912-13, 1916-18, and 1920, and acts automatically to relieve the intensity of the shortage, though at some inconvenience to the shipper. By increasing the average car loading from twenty-eight tons, where it stood at the beginning of 1922 when the usual balance between coal and merchandise loadings gave the last normal average, to thirty tons, which was reached during the shortage of 1920, a 7 per cent increase may be made in the tonnage moved without an increase of cars or facilities. In 1920 the thirty-ton average loading had been established as an attainable average by the railroad executives and the progressive increase in the ratio of loading to capacity during the period covered suggests that more efficient use of equipment through heavier loadings may be expected.



The more rapid movement of cars by the roads seems to be considered generally impracticable by railroad men and offers little possibility of relief in the near future. The above chart, showing the average daily mileage of active cars, indicates the persistence of the same average movement over a term of years with slight decreases in efficiency during the car shortage periods which tend to increase the severity of the shortage. Since fewer cars are moving during periods of car surplus, traffic congestion is diminished, and, as in 1908-09, 1914, the early part of 1919, and 1921-22, a perceptible increase in the rapidity of movement of loaded cars is recorded while a slowing down of car movements occurred during the periods of shortage in 1917-18 and 1919-20. The slow progress of the railroad art is indicated by the persistence of the same average daily mileage and suggests no early relief from car shortage conditions through a sudden increase in the rapidity of the movement of cars.

To promote this more efficient use of existing equipment and to render easier the acquisition of more cars, the National Association of Owners of Railway Securities in 1920 encouraged the organization of the National Railway Service Corporation. The operations of this body are designed to make more efficient the use of the present facilities. The saving thus effected will enable the roads to finance more equipment for their own accounts. The advantages of operation are to include a reduction in empty car mileage, a reduction in first cost of equipment through standardization, a saving in interest on purchase money, a saving through retirement of weak cars, and a saving through an increase of ton-miles per

day accomplished by decreased switching, less damage to cars, and improved distribution. Something has been accomplished in the way of financing purchases, but the plan has not been carried to completion. At present, consequently, it can be of comparatively little service, but its development in the future may be of material aid in alleviating the evils of freight car scarcity.

To cooperate with the railroads in securing better use of their facilities, shippers should plan their shipments, in so far as possible, to take advantage of the seasonal surplus, the existence of which has been previously pointed out. While such action may be expected from many manufacturers, the annual demand for cars in the agricultural season presumably will continue, and complaints of insufficient service will be made by the farmers at crop-moving times.

A considerable increase in the amount of railroad facilities, coupled with a more efficient use by the shippers of the equipment provided, would seem to be required to remedy the car shortage situation. As the application of this remedy cannot be effected immediately, however, the present deficiency of railroad equipment continues to encourage the pyramiding of orders, higher costs, higher prices, credit inflation, and reduction in purchasing power. Such conditions are tending to intensify business activity and will make the subsequent reaction more severe.

CASE STUDIES IN BUSINESS

1. THE ANDERSON STEEL COMPANY[1]

A Case Analyzing the Advisability of Constructing an Addition to a Steel Plant in February, 1922 [2]

THE Anderson Steel Company is, and has been for a considerable period, a successful producer of Bessemer steel. It is not one of the large steel companies but it has able management and adequate financial resources. Several years ago it decided to enter the production of open-hearth steel. Many companies had found it necessary to use this method because the reserves of Bessemer ores were largely in the hands of the older companies and the newer ores which had been coming into the market were non-Bessemer grades. The ore situation was not a serious factor in this case, however, since the Anderson Steel Company possessed reserves of Bessemer ore adequate for years to come. The decision was based upon three considerations: first, because of the elimination of Bessemer ores as a leading factor, the purchasing market had accustomed itself more and more to the use of the open-hearth product; second, open-hearth steel was desired by many purchasers on account of its greater uniformity; third, advantages in production were offered by the addition of the open-hearth process. Scrap iron and steel, which are coming into the market in increasing quantities, can be used to advantage in that method. A combination of the two processes, known as the duplex process, is particularly valuable in hastening production and increasing the output of open-hearth steel at a time of unusual demand. The Anderson Steel Company, therefore, secured reserves of non-Bessemer ores suitable for open-hearth purposes.

On account of the high cost of construction, the Anderson Steel Company did not build in the boom period immediately following the war. In February, 1922, however, consideration was given to the problem of whether the company should start the construction of its open-hearth plant at once or wait until a later date. The plant engineer in consultation with engineers who were specialists in steel plant construction carefully calculated the costs of building and the costs of operation. They reported that the cost of the addition would be an amount slightly in excess of $5,000,000, that the volume of production would be reasonable for the outlay of capital, and that operating costs would be as low as those of any other concern of approximately the same size. The problem was complicated by the fact that the expansion of steel capacity during the period from 1913 to 1920 had been over 40 per cent. For this reason it was thought that the total American capacity might be greater than any immediate future demand would require and consequently no small concern could expect to prosper for a long time to come.

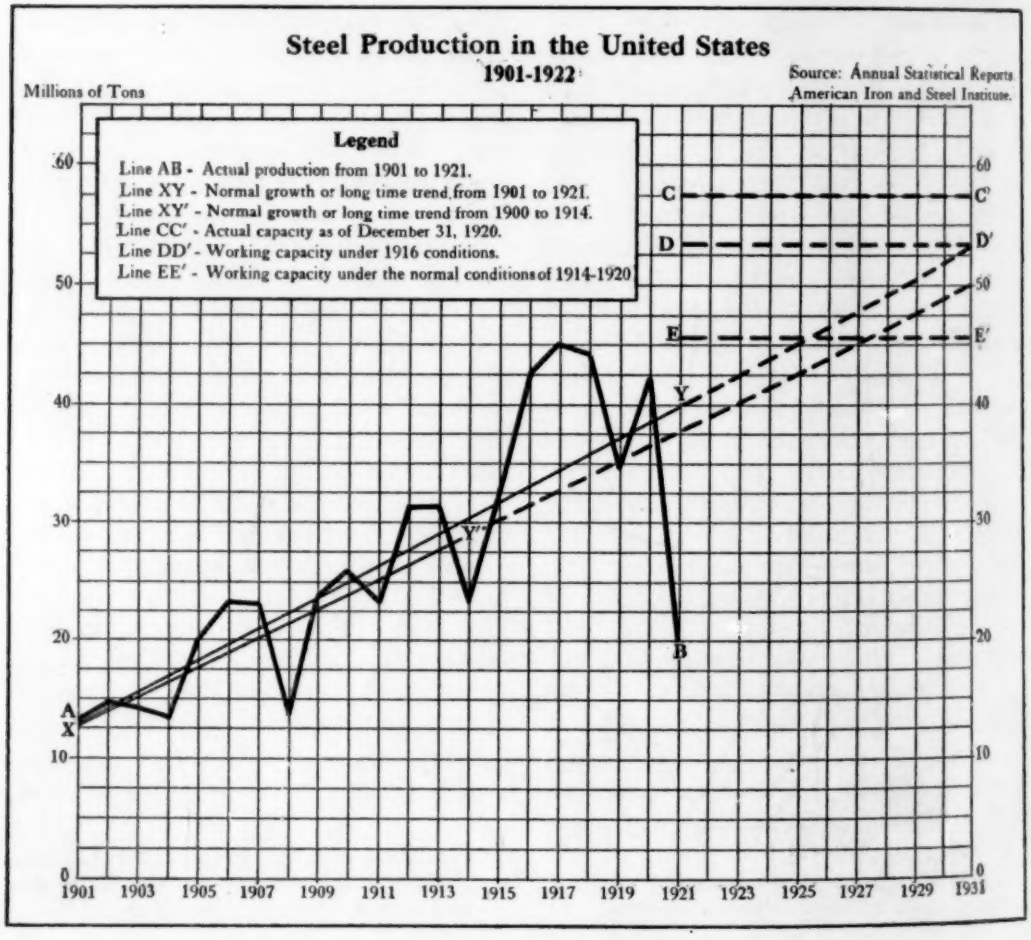
[1] To avoid disclosure of confidential material, fictitious names are used in case discussions.

[2] This problem is considered as of February, 1922. In making the analysis only such data are used as were available at that time.

In deciding, therefore, whether or not February, 1922, was the proper time to build, there were two major considerations: first, was the steel industry overexpanded; and, second, was that the proper time in the business cycle for building? In analysing this second consideration it was necessary to consider both the general business conditions and the probable trend of construction costs.

Industry Not Overexpanded

Owing to the slackened demand for steel products this plant in common with other steel works was operating at less than 50 per cent of normal capacity. The low volume of production at that time, however, was due to the general business depression and could not be taken as normal. In order to judge what the future demand for steel would be, the trend of steel production for the past twenty years was calculated and charted in the manner illustrated by the X-Y line on the chart below. Since the unusual production during 1916, 1917, and 1918 might have caused this upward trend to be abnormally rapid, the trend during the years 1901 to 1914, inclusive, was also determined (X-Y' line) and was found to be slightly lower than that for 1901 to 1921. It seemed best, therefore, to eliminate the war years from the data to be consid-



ered and to assume that the volume of business would increase in the future at about the same rate as it had from 1901 to 1914. If such an increase continued, the demand would reach and pass the capacity of February, 1922, within a few years.

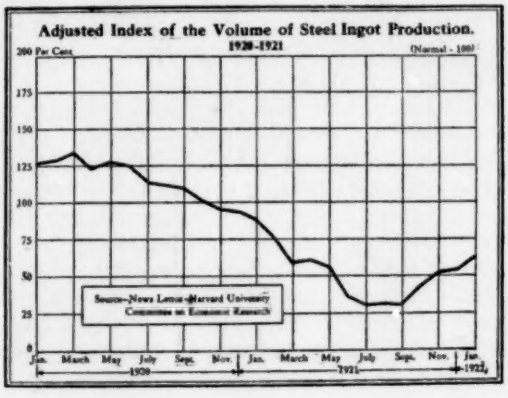
Just when demand would exceed the working capacity of that date depended to a large extent on what percentage of actual capacity the steel companies would use under normal conditions. This percentage is influenced by competitive conditions and unavoidable fluctuations. In 1916 there was the greatest output per productive unit found in any recent year. The demand was nearly constant and there were practically no seasonal fluctuations. If the 1916 efficiency of production were secured and maintained in the future, the demand would not exceed the working capacity until 1933.[3] A constant demand similar to that in 1916 is very unusual, however, and could scarcely be expected in the future. The seasonal nature of the requirements would, under normal competition, necessitate a capacity greater than the average production in order to take care of the peak loads. Labor troubles, difficulties in transportation, and similar causes would add to these fluctuations. Since there are these variable influences, it was impossible to fix with exactness the normal ratio of production to capacity. The assumption could reasonably have been made, however, that this ratio would not be much higher than the average for the years 1914 to 1920, inclusive. These were, on the whole, good years for the steel industry and represent a complete business cycle. During this period the average ratio of production to capacity was 79.4 per cent. On this basis the demand in 1927 would exceed the January, 1922, working capacity.[3] This leads to the conclusion that the industry was not overexpanded and that the Anderson Steel Company was justified from that point of view in building an addition to its plant.

[3] See chart on preceding page.

General Business Conditions Favorable

Having concluded that the steel industry was not overexpanded, it was next necessary to decide whether general business conditions would improve sufficiently so that in the early part of 1923, when the plant was completed, there would be a more nearly normal demand for steel. If the depression affecting the steel industry in January, 1922, were to continue for some time, it would have been good policy to delay building for at least several months. At that time, however, there were strong indications that business was about to enter on a period of revival. Interest rates on four to six months prime commercial paper had fallen from a high point of 8 per cent in November, 1920, to 5⅛ per cent in December, 1921. The average price of ten leading railroad bonds had risen from a low point of 70.3 in June, 1921, to 81.6 in December.[4] These signs indicated an

[4] Dow, Jones & Co. averages.



easing of the money situation and offered evidence that the railroads would be able to finance purchases of rails and equipment on a more reasonable basis. The general increase in speculative activity and the rise in the price of industrial stocks forecasted renewed confidence in business conditions. Bradstreet's Index of commodity prices, which had fallen to a low of 10.6169 in June, 1921, had advanced to 11.3127 in December. The Harvard Committee on Economic Research pointed out in its weekly news letter of January 3, 1922, that its index of the volume of manufacture had increased from 68½ in July, 1921, to about 90. It summarized general conditions by saying:

"We have reached a period in the business cycle which precedes substantial economic improvements."

The effect of this improvement in business conditions was evidenced by the increased demand for steel. Although the volume of production of steel ingots, shown in the chart on page 237, had fallen quite steadily from early in 1920, this decline had ceased in July, 1921. Since that time there had been a consistent increase to January, 1922. This increase was of a magnitude and persistence to indicate a major swing upward despite probable slight reactions. It was stated by the Harvard Committee on Economic Research that

"While new orders have been falling off somewhat and many concerns appear to be waiting till after the opening of the new year before making further commitments, there are encouraging evidences of a larger demand for heavy steel for railroad and construction requirements. Should such a demand develop in the early future, the industry may make a quick recovery, for the demand for light steel is already on a level which is satisfactory, considering general business conditions." [5]

The opinion had been expressed that we were entering a long period of declining commodity prices which would affect both the future price of steel and construction costs.[6] Whether this was to prove true or not, the extended decline would be made up of shorter fluctuations on the upward swing of which satisfactory profits might be made. Such an up-swing of prices seemed certain to accompany the coming revival of business.[7] It seemed probable, therefore, that on account of favorable business conditions, the Anderson Steel Company would find, by the time its plant was completed, a demand for its product at prices which would yield a fair profit.

Trend of Building Costs

The possibility of a further decline in building costs had suggested waiting until the bottom was reached before letting the contracts, with the hope of consequently saving a large sum. The

[5] *News letter* of December 24, 1921.

[6] Leonard P. Ayres, vice-president of the Cleveland Trust Co., in *The Future of Prices and Wages*, page 96, says: "Three times during the past 110 years the general wholesale price level has reached the 1920 figures. In each of the two previous cases the peak of high prices has been followed by thirty years of irregularly falling prices and then by about twenty years of rising ones. It is probable that we are entering upon an extended period of falling prices, broken by occasional shorter periods of rising prices."

[7] Harvard Committee of Economic Research. *Weekly News Letter* of January 21, 1922, page 24. "It is highly probable that further improvements in business, now as in the past, will be accompanied by rising prices, and that the rise will begin in the spring of 1922 and continue into 1923. It is also probable, on the evidence of price records, that during the next year or two the prices of a considerable number of important basic commodities will show an increase of from 25 to 50 per cent above the low points of 1921. This was the case after the periods of depression in 1900, 1904, 1908, 1911, each of which was followed by a period of rising commodity prices lasting at least fourteen months."

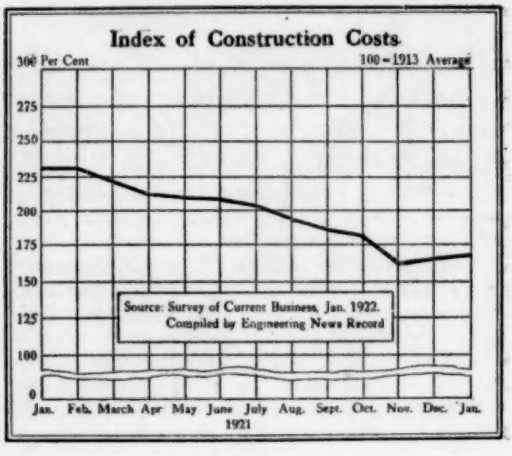
long decline in building costs, as shown by the chart below, had ceased in November of 1921, and in January, 1922, stood at 169 on the basis of the 1913 average as 100. While this was considerably higher than the pre-war average, it was observed that the value of building permits issued showed a marked increase for the entire year, with the exception of a seasonal decline in the last two months. The volume of construction in New England, the activities of which have in many ways forecasted the activities of the country as a whole, also showed a marked upward trend during all of 1921. In view of both the increasing demands for building, which would result in greater material requirements, and the general rise in price level, the conclusion was that the price of building would not decline very much further for a considerable period.

Because of the fact that construction work had been below normal, furthermore, there would tend to be a heavy demand for building of all kinds when it was generally conceded that costs would go no lower. When this occurred, it might tend to give a scarcity value to construction, and the rise from the low point might be rapid. To ascertain that the low point had been reached, moreover, it would be necessary to wait until a decided upward trend was evidenced. In this case contracts would be let at a point as high as that marking a similar period before the low point. Because construction was below normal capacity, it was felt that contractors, in order to keep their organizations together, might be bidding below actual costs in the hope of covering their contracts at a lower price later on.

It was probable that interest rates would decline further. While the company might save as much as one per cent on capital borrowed at a later time, the difference on $5,000,000, although a continuing charge, was not a large consideration in view of the advantage of being in the position to meet a profitable demand during the expected upward swing of business. This additional interest charge would be offset in part by the fact that, once the plant was in operation, it would no longer be necessary to pay the minimum rental charges on the ore reserves.

Conclusion

Since the indications were that the steel industry was not overexpanded and that February, 1922, was a good time in the business cycle to build, as evidenced by the facts that the demand for steel seemed to be moving toward normal and that building costs were about as low as they would be, the Anderson Steel Company should have proceeded at once to let the contracts for its plant. In general it may be said that the best time in the business cycle to expand is when construction costs are low and there are indications of an increasing demand for the product. The Anderson Steel Company would not



have been justified in delaying building to get the lowest possible plant cost and interest rates because it would have imperiled its position in the selling market by not being able to produce open-hearth steel and would have lost the opportunity of operating during a period of profitable business.

2. THE PALMER MANUFACTURING COMPANY

An Analysis of the Experience of a Manufacturer of Plant Equipment in an Association for Export Trade Which Is Operating Under the Provisions of the Webb Law [1]

BECAUSE of difficulties in the allocation of orders among the members of the Export Equipment Corporation, the Palmer Manufacturing Company is considering withdrawing from the organization and establishing its own sales agencies abroad. The Export Equipment Corporation was formed under the Webb Law [1] in 1919 by seven manufacturers of metal working tools and equipment. The manufacturers are keen competitors in the domestic market, but they were induced to cooperate in an association to develop their trade abroad.[2] The corporation maintains sales agencies in Belgium, France, and Italy. Expansion into the other countries of central and western Europe may ultimately enable it to dispose of about fifteen per cent of the total production of its members.

Difficulties in Cooperation

The present plan of allocating orders appears to be as satisfactory as any that could be suggested. The problem arises, however, from the fact that the firms which are trying to cooperate in foreign business are aggressive rivals in domestic trade. In the United States the selling points of each company are based on the trade name and patented features of its machinery. Each concern wants to fill entire single orders with its equipment. The larger orders from Europe are received at irregular intervals, so that it is not possible to distribute them to single manufacturers without giving one company more business than another. Some orders received in the fall of 1922 amounted to $200,000. Initial orders are allocated as nearly as possible on a basis of equal cash value. An attempt is made to avoid supplying two different types of machines to one factory for the same process, for some European buyers are unwilling to accept mixed lots of equipment. Repeat orders, therefore, will not be subject to allocation, and will be filled with the type of machines previously installed. The sales organization tries to estimate possible future orders from each customer and to distribute the first business so that repeat orders will not upset the balance of business

[1] The Webb-Pomerene Law (Export Trade Act) was enacted April 10, 1918. "It was the outgrowth of a report to Congress by the Federal Trade Commission in 1916. . . . Under the Act, 'associations' may be formed for the sole purpose of engaging in export trade, these associations to be exempt from the Sherman anti-trust law of the United States, and from a certain portion of the Clayton Act, with the proviso that there shall be through the association no restraint of trade within the United States, no restraint of the export trade of any domestic competitor, no enhancing or depressing of prices, or substantial lessening of competition within the United States."—*Commerce Reports*, February 27, 1922, page 481.

[2] A detailed discussion of the advantages of Webb Law associations may be found in *American Foreign Trade*, Notz and Harvey, 1921.

between the members of the association. Executives of the export association state that it is impossible to sell "American machinery" without specifying the brand and showing the customer similar machines in operation. For this reason agents are instructed to show only the types of machines which the American office desires to sell in order to maintain an equitable distribution of business within the association.

The present plan implies that European buyers consider all American machinery of equal merit and do not desire to select particular brands. Buyers, however, often insist on making their own selections, and are not interested in the distribution of business among the manufacturers. The plan further implies that each member of the association will be satisfied to allow the organization to make sales by showing only the machines of a competitor. The sales manager of each competing company, however, believes that his machinery is superior to that of any of his rivals, and feels that it should be shown to all prospective buyers.

The Palmer Manufacturing Company cannot develop an individual reputation in Europe greater than that of the association of which it is a member. It will share in any ill-will caused by inferior products or unsatisfactory methods of its associates. This result is illustrated by the experience of a company which exports a raw material, and which had its own foreign agents before joining a Webb Law association. It states that its trade has been injured by the actions of other members since they have been able to make trade connections at its expense, to secure inside information about its business, and to substitute material of inferior grades for the standard product. This company believes the situation is serious enough to require its withdrawal from the association. The trade-names of the best tool machinery will be a partial protection against ill-will caused by the inferiority of other brands; but in other respects the Palmer Manufacturing Company will risk a repetition of the experience of the company which exports raw material if it seeks to expand its foreign trade through the association.

It is maintained that internal difficulties can be met by developing a cooperative spirit, and that cooperation is feasible because of the mutual advantages.[3] Practically, it is questionable if a cooperative spirit in foreign trade can be developed among firms whose domestic business is keenly competitive, and whose real interest abroad is to secure

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[3] "The specific advantages of cooperation are concisely stated in the official proceedings of the Fourth National Foreign Trade Convention, as follows:

"'Maintenance of highly organized export service at minimum cost to participants, employment of American advantages in advertising, technical demonstration and "follow-up" methods.

"'Improved credit information and financing of foreign sales, more advantageous traffic contracts through greater and regular tonnage, superior facilities for customs brokerage, warehousing, etc.

"'Assumption, by the cooperative organization, of credit extension which manufacturers, dependent upon a quick turn-over of capital, are unable to provide.

"'Survival of initial losses, fatal to an individual company, which are sometimes incurred before American goods gain a foothold.

"'Division of foreign business upon an agreed basis adapted to the mutual interest of all participants from the standpoint of sustained labor employment, and ability to produce at a price to meet foreign competition.'"—*Combination in Export Trade,* Guaranty Trust Company of New York, 1918.

Other favorable discussions are: "How the Export Trade Act is Operating," Huston Thompson, Chairman, Federal Trade Commission, published in the *New York Evening Post,* August 6, 1921, to be obtained from the Federal Trade Commission; and, *Combining for Foreign Trade,* Guaranty Trust Company, 1921. The latter considers the practical aspects more thoroughly.

for themselves the largest possible volume of orders.

Problems of Competition

The considerations that heretofore have been discussed are grounds for withdrawal from the Export Equipment Corporation only if the Palmer Manufacturing Company can compete successfully alone. If it withdraws, it will be confronted with the prospect of competition with the association. The company is large enough to maintain a complete selling organization in Europe, and should be able to compete successfully after it is established. The experience of an association which exports hardware indicates that European buyers prefer to deal with large American firms rather than with an association composed of small concerns. The buyers believe that they receive better service and a more uniform line of products from large individual companies. From this it may be inferred that the Palmer Manufacturing Company would not be seriously handicapped in competition with an association.

One of the selling advantages of the export association over an individual firm lies in its ability to prevent competitive underbidding among its members. Price-cutting by English and French manufacturers and by non-member American firms is not eliminated. Since the Export Equipment Corporation does not have a trade monopoly, it will be forced to meet its competitors by the practice of underbidding which its members joined the association to avoid.

If the Palmer Manufacturing Company withdraws from the association, the present agents may explain that they have discontinued the selling of Palmer machinery because other American machinery is better. Since the Export Equipment Corporation has not a long-established business, it is probable that this explanation would not injure the company materially.

It is possible that the withdrawal of the Palmer Manufacturing Company may result in the dissolution of the association, in which case the present members will become individual competitors. The experience of the company in South America indicates the keenness of the competition in which it would take part. Among European firms there seems to be some spirit of cooperation in both foreign and domestic business, and their governments are favorable to trade agreements among competitors.[4] Among American firms there is a stronger spirit of competition since the government of the United States forbids the type of domestic cooperation that is permitted in Europe. In spite of this situation, the Palmer Manufacturing Company is so strong that it should be able to compete successfully with its rivals.

Foreign Representatives

American tool machinery is not well known in Europe, is therefore more difficult to sell, and may require more service after installation than European equipment. The Palmer Manufacturing Company should expect that mistakes may be made in forming a foreign sales organization, for it has only the experience of the Export Equipment Corporation to serve as a guide. The association has agents who are well known in the factory centers of Europe. These agents not only make sales, but they arrange financial matters subject to the approval of the home office in America. Their reputation with the trade gives them an advantage in secur-

[4] Annual Report, Federal Trade Commission, 1921, page 62.

ing orders among the larger firms, and with sales to such firms the Export Equipment Corporation has experienced no difficulties with credits. Although the Palmer Manufacturing Company cannot secure better agents if it goes into foreign trade on its own account, there is no reason to suppose that it cannot secure representatives who are sufficiently well known to be able to sell to the better type of buyers.

Expenses

One of the important advantages of export associations is the elimination of duplicate overhead expenses incurred by separate sales organizations. The value of this advantage is questioned by an editorial which appeared in the New York Times [5] when the proposed dissolution of the Consolidated Steel Corporation was announced. It stated that overhead expenses were exorbitant in many Webb Law associations. The Palmer Manufacturing Company believes, however, that expenses in the Export Equipment Corporation have been kept at the minimum consistent with the best interests of the members. A sales organization of its own would cost the company more than its proportion of the expenses of the association. Since its own salesmen, however, would put more effort into selling Palmer machinery, the company could expect increased sales with profits that would more than offset the increased expenses.

Conclusion

From this analysis it is recommended that the Palmer Manufacturing Company withdraw from the Export Equipment Corporation and establish its own foreign selling organization. It is doubtful whether the policies of competition at home and cooperation abroad can be harmonized. The problem of the allocation of orders will be a continual source of friction within the association. The necessity of keeping orders balanced between the members of the Export Equipment Corporation prevents the use of the most aggressive sales effort for any one brand of machinery. It is probable that more sales can be made by the Palmer Manufacturing Company through competitive action than through cooperation. The patented features of the machinery, the lack of standardization, and the irregular and large orders are conducive to competitive selling.

3. ALLERNET LACE COMPANY

A Case Dealing with the Protection of Patterns and Designs and the Method of Sale of Novelty and Style Goods

BECAUSE the Allernet Lace Company [1] is one of the few companies employing expert designers and draftsmen, its leadership in developing lace patterns has been established. As a result, its patterns are copied extensively by rival companies. This pirating of lace patterns became so serious that in June, 1922, the management made a special study of conditions with a view to remedying the evil.[2]

Present Sales Methods

It was found that the company's own customers are the source of samples from which designs and styles are

[5] *New York Times*, October 2, 1922.

[1] See next page. [2] See next page.

copied. All its lace is marketed through a selling agency in New York, which uses the samples made up each June and December to show to the garment manufacturers, who are known in the trade as cutters-up, and to the wholesale trade. The wholesale trade, in turn, requires samples of the laces which it purchases to show to retailers. In many instances these wholesalers not only permit the patterns to be seen by lace manufacturers but also give them actual samples. Wholesalers follow this practice on the theory that by encouraging competition they will secure their laces at better prices.[3] The company has explained to them that this policy often proves ruinous to their own lace business through the resultant glutting of the market, since the value of the lace patterns is dependent to a large extent on their exclusiveness; but the practice of giving away patterns has continued. The present method of sale gives distribution not only to department stores, specialty stores, and cutters-up in New York, but also through the wholesaler to retail establishments throughout the country.

Foreign Style Element

At present much of the company's product is being sold as foreign importations. The American public apparently does not have sufficient faith in the domestic industry to buy a domestic novelty line such as the Allernet Company features. In most cases retailers, themselves, are as ignorant as the public of the sources of the laces which they sell, as shown by an incident which occurred in the New Jersey city in which

[1] The Allernet Company, established in 1905 with five lace machines, had in 1921 thirty machines and sales of over $1,000,000. Its product had been changed gradually from the more staple lines until in 1922 it consisted almost entirely of high grade novelty goods. The company employed about two hundred men and women, many of whom were highly skilled. In addition much of the lace which was woven or twisted in six-yard widths was distributed to home workers to be separated into the narrower widths. The company did all its own dyeing and finishing.

[2] The design can be worked out by ordinary designers, once the particular kind of lace to be favored by fashion is determined. Late in 1921, for instance, the Parisian dressmakers were featuring Spanish lace. Through its selling agent the Allernet Company received assurance that the spring lace styles in America, following as usual the foreign styles, would be Spanish, chiefly fibre silk and wool or spun silk and wool in black and other colors. The company's designers immediately developed patterns suitable for this kind of lace. Experience had shown that designs which had been used many years before for the same kind of lace could not be used. From each of these designs the drafting, which was the most important part of the pattern creation, had to be done. This consisted of making a large drawing showing the position of each thread in a different colored ink for each movement of the shuttles in the machine. From this complicated drawing the design was coded so that the jacquard cards, which regulate the pattern in the loom, could be punched. After the pattern was once drafted, it could be copied easily. An illustration of the ease with which this could be done was furnished by the copying of the weave of a filet lace. By months of steady and skilful drafting, a lace almost identical in appearance with the real hand-made product was achieved. The low price for which it could be sold made it very much in demand. Since this weave could not be patented, because it was itself a copy of a hand weave, rival mills almost immediately copied it and flooded the market.

[3] The selling price of novelty lace in which the Allernet Company specializes has been fixed largely on the basis of what the traffic will bear. First, the style of the garment is determined with which the particular lace pattern will be used. Then the cost of the other materials and the making up of such a garment is figured. The price of the lace per yard is based on an estimate of what further expense the cutters-up or dressmakers will bear for the garment. The domestic companies could not have pursued such a policy, even with the protection of the sixty per cent ad valorem tariff on imported lace, had not the quick changes in style made it impossible for foreign manufacturers to give sufficiently prompt deliveries. In the highest quality laces, however, especially those which require a great deal of hand work and which also are not so subject to style changes, the domestic industry cannot compete with foreign manufacturers.

the Allernet mill is located. The wife of the manager of the Allernet mill noticed a piece of Spanish all-over lace in a department store showcase and recognized it as one made in the local mill. She was surprised when told by the salesperson that the lace was imported since "they cannot make lace like that in this country."

Legal Aspects

Under existing laws, lace patterns can be patented at an average cost of $65; but since from two to three months' time is required, the designs can be copied and the style changed before the patent is granted. In case of infringement the company owning a patent can bring suit and collect damages from the infringing companies, retroactive to the time when application for the patent was made. In the past, however, this action has been considered too expensive and of doubtful benefit.

The evil of pirating styles has not been confined to the lace industry alone. A Design Registration League was formed several years ago by representatives from practically every industry into which the element of design entered. The conference committee of the organization included representatives of twenty-three trades such as the lace, silk, and ribbon manufacturing industries, and twenty-five industrial associations, such as the Silk Association of America. Its object was to secure the passage of a bill by Congress which would give to the designer and manufacturer the same adequate protection as the copyright now granted to authors and their publishers.[4]

Although it has actively supported this bill, the Allernet Lace Company is dubious as to its efficacy. Its provisions for quick action in the granting of pattern copyrights would be highly desirable if they would be a more serious deterrent to pirating than the words, "Patent Applied For," have been. Determination of the validity of the copyright would be subject to the same delays as that of patents. Because of the legal difficulties of establishing the fact of infringement, especially if the pattern should vary only in slight detail, the management is convinced that even if the bill were passed, other means of preventing pirating would be necessary.

It seems, therefore, that it would be unwise for the company to rely on legal protection of its designs and that the cost of probable litigation could be spent to better advantage in developing

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[4] It was proposed to remove the subject of design protection from the Patent Division to the Copyright Division, and at a cost of $1 for a copyright to give economical and immediate protection in place of the expensive and long delayed protection under the Patent Law. It was not believed that this law would prevent all design copying, but that it would tend to discourage the practice. Many objections to the bill have been raised on the ground that the low fee would encourage many manufacturers to ask for unwarranted protection which would lead to endless litigation. It was pointed out that the bill might work an injury to innocent infringers.

Concerning the bill, however, Mr. Morrison, Chairman of the Patent Committee of the House of Representatives, said, "Many foreign countries have enacted statutes giving to authors of designs copyright protection easily and quickly obtained at small cost. The process of securing protection under our patent laws is necessarily slow, tedious and expensive—the procedure under this bill is short and simple, resembling the practice in copyright cases, rather than patent cases. The Commissioner of Patents expresses the opinion that the statute will be capable of easy and effective administration, and will be helpful to the industries and commerce of the country. Some members of the Committee were at first inclined to fear that the bill might lead to excessive litigation, but the fact that the copyright law has not produced such results went far to allay their fears. . . . We believe that the provisions of the bill are sufficient to protect registrants against actual offenders and also to discourage suits for technical and unsubstantial invasions of one's rights and make it practically impossible to bring, or to threaten to bring, vexatious actions to intimidate or oppress rival enterprises."

sales methods to give more certain protection.

Proposed Sales Plans

Two alternative sales methods are suggested:

1. The use of a commission agent who will sell directly to the retail trade and the cutters-up.

2. The establishment of a sales organization by the company to sell directly to retailers and cutters-up.

Under the first plan the designs would be given better protection, since no samples would be required except for the cutters-up. A commission agent has a highly trained selling organization and offers numerous well established contacts with the trade. He would, moreover, guarantee all accounts and attend to all collections. The chief objection to this plan is that it would be impossible for the Allernet Lace Company to secure an agent who would handle their line exclusively. Available commission agents handle other lines of merchandise, such as staple laces, novelty trimming, embroidery, buttons and ribbon. Although this would distribute the selling burden, it would preclude the sales effort required for laces.

Several large lace companies have recently adopted the second plan, namely, that of selling directly to retailers and cutters-up, but the Allernet Company is unable to ascertain whether the change was for design protection or some other reason. If the firm adopts this plan, it will be forced to establish a New York office and display rooms in charge of a highly paid personnel. A suitable manager cannot be hired for less than fifteen to eighteen thousand dollars per year. It will be necessary to employ special salesmen to sell to the cutters-up and to the retail buyers who come to New York. Other salesmen will be required to cover the larger cities in the eastern and central states. It is estimated that this will give sufficient distribution for their product. There will be the practical difficulty of adjusting the selling organization each season to the changed conditions, which result at present from the fluctuating proportion of the company's sales to cutters-up and to wholesalers. Past records show that sales to wholesalers have varied from ten per cent to ninety per cent of the season's totals, the remainder going to cutters-up. In the past the selling agency has been able to shift its salesmen between wholesalers and cutters-up as conditions demanded.

If the company sells direct, it will be likely to encounter a great deal of distrust on the part of the retailers, and the style leadership which the line has enjoyed may be weakened for a time at least by the knowledge that its laces are a domestic production. It will be necessary, moreover, to secure elsewhere the style assistance now received from the selling agency's foreign representative, since the latest European styles have been followed in America almost without exception.

Direct Selling Will Lead to Brand Recognition

In the past, except during the height of the sellers' market, the company's efforts to sell under its own trade name have been blocked successfully by the wholesalers, who insisted on selling under their own brands. A change to direct selling will give the firm an opportunity to establish its brand with the retailers and cutters-up and thus to capitalize the novelty style leadership which the company's laces have built up under foreign appearing brands. Since

its product is often sold as foreign goods, this brand development undoubtedly will be a difficulty. The company, however, is morally bound not to contribute to the deception by placing foreign appearing marks on its laces. The more favorable attitude toward domestic styles, designs and goods, which seems to exist at the present time, also will facilitate the building up of a domestic lace brand. The advantage of this to the company will be in the building up of a steady demand for its product and also in enabling it to capitalize fully its design leadership. To put the business on a really firm foundation its reputation should be established on a domestic basis.

Proposed Change Financially Feasible

At present the selling agent's commission is eight per cent and the jobber's margin ranges from 22½ to 33⅓ per cent (of sales). The Allernet Company may expect normal sales of $1,000,000. With its own organization, therefore, the company will have at least $370,000, the present margin between factory and retailer, with which to work.[5] The following organization can be provided:

NEW YORK SALES OFFICE	COST PER YEAR
Manager, salary, $15,000 to	$18,000.00
Assistant manager, who is also head city salesman	8,000.00
Clerical force, collections, interest on additional capital needed to extend credit, bad debts, upkeep, and miscellaneous	35,000.00
Credit manager	7,500.00
Rent	$ 20,000.00
City, office, and cutters-up salesmen—2 at $4,000 and 2 at $5,500	19,000.00
10 traveling salesmen—	
3 at $3,000	$9,000
3 at 4,000	12,000
3 at 5,000	15,000
1 at 8,000	8,000
	44,000.00
Traveling expenses, 10 salesmen, 40 weeks, at $140	56,000.00
Style trend information	2,000.00
Advertising and dealer help	40,000.00
Total	$249,500.00

These estimates seem liberal both in amount of expenditure and in adequacy of selling organization. There will remain a considerable margin to cover unforeseen expenses incident to direct selling.

Many difficulties undoubtedly will be experienced in building up a new sales organization and in getting it to function properly. The company will have to seek new customers and impress upon them the merit of domestic laces in general and of its own product in particular.

A first advantage of the proposed change will be design protection. Direct sale will require orders to be taken from retailers at the time they were formerly placed by wholesalers, three or four months before the lace is offered to consumers. Samples for resale, however, will not be required and hence this source of patterns and designs will no longer be open to pirating of competing manufacturers. The cutters-up may still be a source of design leaks, but it is doubtful whether they will provide samples for manufacturers to copy since their product also depends for its price on the exclusiveness not only of the general design but also of the material from which it is made. Since lace styles are dependent on the styles of other

[5] Factory return from sales	$ 920,000.00
8% Commission on list to selling agent	80,000.00*
List price to wholesalers	$1,000,000.00
Wholesalers' mark-up 22½% on sales (29% on cost)	290,000.00*
Price to retailer	$1,290,000.00

*Margins available to company under direct sales plan.

materials used, the cutters-up can be counted on to furnish style trend information. Reputable cutters-up will not be likely to give away designs, if they in turn are to be aided by the company with its newest styles. The style leadership of the Allernet Company should give effective control over them. It must be considered, however, that opposition from the jobbers will be felt strongly in direct dealings with cutters-up, since in many cases they have strong financial interests involved. At any rate the company could eliminate this trade altogether if the change in selling methods proved to be the means of creating sufficient retailer demand.

From the standpoint of sales results, also, direct selling seems advantageous. Since lace depends upon the pattern, design and other style elements, it seems that specialized sales efforts are needed to bring out these qualities in the most advantageous light. The direct contact both with the style center and with the retail market would probably assist in the successful interpretation of style trends. In any line in which the style element is of such importance, the closest possible contact with the trade is essential. Since a commission agent sells several lines, he is not able to give special attention to any manufacturer's goods. Hence, the change to direct selling will eventually result in increased sales for the Allernet Company.

Despite the fact that selling expenses, capital charges, administration costs and credit risks will be larger (the selling agency has guaranteed accounts), there will be a margin for profit which may be increased as brand development becomes strengthened with retailers. Just as the reputation of a modiste is often the chief element in her ability to set high prices on her costumes, so the company's reputation for style and design, once established with consumers and retailers, will enable it to demand higher prices.

It is recommended, therefore, that the Allernet Lace Company establish its own selling organization with an office in New York to sell to the retail trade in the larger cities and to the cutters-up, specialty stores, and resident and visiting buyers. It is believed that the plan of direct selling will be effective in preventing further pirating of designs. This method of distribution, furthermore, seems to be financially feasible, capable of building up the company's brand, and effective in the specialized sales efforts it provides.

4. THE PIKE COMPANY

A Case Dealing with the Advisability of Insuring Foreign Shipments against the Insolvency of the Foreign Buyer

DURING the depression of 1920 and 1921 the Pike Company, an American manufacturer of filing cases and indexes for office use, experienced difficulty in securing payment of its foreign accounts. This concern exports some half a million dollars' worth of goods yearly to the West Indies, South America, Mexico, New Zealand, and to a limited extent to the Far East. This trade is approximately equal to one-tenth of its domestic business. The company deals directly through its own salesmen and fills all orders from the factory in the United States. The terms are usually sixty-day or ninety-day sight drafts, unless the customer's credit report is unsatisfac-

tory, in which case cash is required against documents in New York. Because of poor business conditions in foreign countries and fluctuating and unfavorable rates of exchange, many customers formerly of satisfactory credit standing have failed to meet their accepted drafts when due.

In the autumn of 1922 the agent of an insurance company dealing in insurance of foreign credits suggested to the credit manager of the Pike Company that, to prevent the recurrence of such losses, he take out insurance on his foreign business. The insurance company is operated as a mutual enterprise in which membership is secured by the payment of a fee.[1] Each member is supplied with a rate book which lists by countries the names, businesses, and rates of insurance for buyers who can be insured as well as the names of those concerns which are not considered satisfactory risks. Members may insure any or all of their accounts which are given an insurable rating. The insurance policies cover the insolvency [2] of the foreign buyer at rates varying, according to the risk, from one to one and one-quarter per cent for sixty days; the rate is determined by the moral as well as the financial standing of the customers. A member may renew his policy at one-eighth of one per cent for each thirty days, until the buyer either pays or becomes insolvent. In the latter case, the insurance company takes over the account and makes full payment of the insured amount to the member. The policy may be taken out by the member as soon after the receipt of the order as he wishes, so that he may protect himself while the order is in the process of manufacture. The Pike Company considers the insurance company financially sound, as approximately two-thirds of its risks are re-insured with other insurance companies. In case of an operating deficit or in case of bankruptcy, each member is liable only to the amount he has paid in premiums for the year. On the same basis, since the aim is to give insurance at cost, premium returns in excess of cost are to be distributed yearly.

The Pike Company did not take out credit insurance. The credit manager felt that such gilt-edged risks as the insurance company would accept would not need insuring and that the more doubtful accounts on which the losses would be heaviest were not insurable. He failed to recognize, however, that since the insurance is made at cost, he would be paying in premiums only for the risk on such gilt-edged accounts. No manufacturer can predict when he will have to suffer unusual losses on this type of risk. Even some of the best accounts may result in bad debts at times and it is for the risk on these accounts, and for this risk only, that the

[1] Membership in the insurance company not only gives the privilege of insurance, but there are other advantages such as the use of the market guide as a basis of information for securing new accounts and the protective service rendered to members by the insurance company in keeping careful record of all cases of rejection and dispute, this record being used in warning interested members against further dealings with offending buyers, except on a strictly "cash with order" basis.

[2] Although primarily the policy covers insolvency of the buyer, actually the interpretation of insolvency is broader than the one usually accepted. Although the buyer is not technically insolvent, the insurance company pays a loss when a buyer absconds or transfers in bulk his stock in trade without making due and proper provision for payments of his debts, when a writ of execution against him is returned unsatisfactory, or when an account is proved uncollectible by law. One or two cases have actually occurred where losses have been paid against buyers who have not become technically insolvent and against whom not even a suit has been filed, but it has been obvious from independent evidence submitted that the condition of these buyers was such that it would be a mere waste of money to institute legal proceedings against them for collection of the debt.

premiums are paid. The situation must be studied more carefully, therefore, in order to determine what action the Pike Company should have taken.

It must be understood thoroughly that only the solvency of the buyer can be insured and that accounts cannot be insured against loss from rejections or disputes. Inasmuch as the premiums represent the cost of this particular risk, the seller is paying for the insurance of this risk only. The fact that other risks are not insurable, therefore, is not a sound argument against insuring the solvency of the buyer.

The purpose or function of insurance is to distribute the risk of possible large, unforeseen losses that may occur in any one fiscal period. The purpose is not to protect a concern against the average yearly credit losses that can be estimated. The advantages of insurance, therefore, cannot be determined on an exact cost basis, but rather on the probability of exceptionally large, unforeseen losses. The size and experience of a concern in foreign trade, the nature and type of the article exported, and the nature and origin of the foreign order are factors which make the risks of exceptional losses large or small.

A firm doing a small foreign business probably would find it advisable to take out this insurance. The loss of a single account would amount to a considerable portion of its foreign trade. The impossibility of wide distribution of risk increases the danger of large losses in any one year. It may be possible for a large concern to insure itself by setting up reserves against possible losses over a long period of time, but this would be impractical for a small concern. The size of the trade, also, might not justify the small concern incurring those expenses of the credit department necessary to investigate the foreign field. In a like manner, a manufacturer just entering into foreign trade, who had no basis for estimating his risks, could safeguard himself by insuring. On the other hand, it is possible that such dependence by the credit department on insurance might lead it to relax its vigilance. The Pike Company is not entering into foreign trade as a new concern, nor is its volume of foreign business small enough to justify the credit department in not investigating this field. The danger is not great, therefore, of exceptional losses from these causes.

If the product of a manufacturer is of a perishable nature, or is subject to seasonal demands or to style influences, that manufacturer can expect somewhat greater debt losses than those which a manufacturer of a more staple product would suffer. When a buyer becomes insolvent before he has received the goods, the manufacturer can salvage them. This process, however, takes time and, should the product be subject to any of the above influences, the salvage value is likely to be particularly small. A shipper of meats, for example, encounters this danger. Again, such a product as style shoes may depreciate before it can be reshipped and resold.

When the price of an exported article fluctuates frequently and rapidly, as is the case with leather and certain textiles, for example, the debt losses of the manufacturer are liable to be great and uncertain both because the risk of insolvency is greater for importers of such products and because, when prices are falling and the buyer becomes insolvent, the product may depreciate greatly in value during the process of salvage. It must be remembered, however, that the salvage value of the product is important only when insolvency occurs before the goods have been received, because the manufacturer

has little chance of being able to recover the goods after they are in possession of the buyer. The indexes and files made by the Pike Company are of a standard nature, subject neither to style nor perishable factors nor to violent price fluctuations. No goods are manufactured for special orders. The risk of bad debt loss from these causes is not great for this company.

Because of the precarious financial conditions in certain countries, such as Cuba, for example, an exporter would hesitate to accept unsecured foreign orders even though received from buyers who have always proved trustworthy. Since, however, the insurance risk is based on the individual buyer rather than on the financial or business conditions within a country, insurance may be taken out. An exporter by insuring, therefore, would be able to fill orders which otherwise he would deem it advisable to refuse. Again, should an exporter receive an order from a customer with whom he has never dealt and about whom no information is readily available, he would take considerable risk in accepting it. Should he fill the order, he would feel it necessary to ask for cash. Insurance would enable the manufacturer to secure the business and extend credit. When an exporter is expanding into new territories this situation often arises. Insurance in such a case may be advisable. Lastly, risk of serious debt losses is comparatively great for manufacturers who infrequently ship large orders. Should one buyer become insolvent, the loss might be equal to a large percentage of the exporter's foreign trade. In such cases, too, insurance might prove valuable.

The Pike Company has a fair sized foreign trade, large enough to justify the expense of securing information on foreign credits. It is not new to foreign trade. Its product is of a standard nature. Even though there is a possibility of exceptional losses at any time, such losses are unlikely to occur in the trade of the Pike Company. Hence, the cost of insuring all its accounts at all times would not be justifiable. Since, however, periods of falling prices and general business depression bring greater risk of debt loss to all manufacturers, the company, anticipating such conditions, should take out insurance at such times on all accounts. At other times the Pike Company would find it expedient to insure orders secured from buyers in new territories or in financially weak countries and from buyers with whom it is unfamiliar and from whom, otherwise, cash payments would be desired.

REVIEWS OF BUSINESS LITERATURE

Wyman, Walter F. EXPORT MERCHANDISING. *New York: McGraw-Hill, 1922. 397 pp.* *$4*

"EXPORT MERCHANDISING" deals with the practical problems which constantly arise in connection with the exportation of American-made merchandise. Its sections on the organization of an export department, the training and treatment of export salesmen, and the planning of an export sales campaign, give an accurate description of present-day practices and contain a number of constructive ideas. They indicate the necessity for common sense methods, and, wherever possible, point out the similarity existing between the functions of export and domestic selling. Other chapters are designed to assist the business executive in the shaping of his policies on foreign credits and collections, on the selection of avenues of distribution abroad, and on the use of correspondence and advertising in export trade.

The author, Walter F. Wyman, writes from a long experience as Sales and Export Manager of the Carter's Ink Company, and from a careful study of the subject. He is not content merely to describe conditions and point out pitfalls, but wherever possible he indicates the trend and makes suggestions with reference to the future. His common sense viewpoint is traceable throughout the book.

In its field, *Export Merchandising* ranks with Mr. Hough's *Practical Exporting* as a leader. But whereas Mr. Hough's book is partly academic in its appeal, *Export Merchandising* goes to the opposite extreme in being practical. Mr. Wyman could effect improvements by going more thoroughly into the economics of his subject and by presenting a clearer picture of the significance of world-trade movements. In conclusion, it may be said that *Export Merchandising* carries a direct appeal for the American manufacturing exporter and for all who participate in the exportation of American-made merchandise.

Furniss, E. S. FOREIGN EXCHANGE. With an introduction by Allyn A. Young. *Boston: Houghton Mifflin, 1922. 407 pp.* *$2.50*

PROFESSOR FURNISS's manual on foreign exchange gives the reader a painstaking picture of the workings of international payments, but does not pretend to make any original contribution to the subject. The book deals mainly with foreign exchange as it was before the war, as the present situation is entirely unprecedented and is unlikely to last long.

The opening chapters treat of the fundamental use and nature of bills of exchange, the banking relations growing out of their use, and the determining factors of rates of exchange. The author ably elucidates certain interesting principles governing the present pars of exchange, pointing out that the true par is the purchasing power of the foreign currency relative to the purchasing power of American money at home.

A chapter devoted to the explanation of the relation of foreign investments to the exchange market is of timely interest, now that so many foreign securities are being sold in this country. The central portion of the book is devoted to a careful description of all the mechanical details involved in foreign exchange. The last chapters are devoted

to an analysis of the London and New York Exchange markets. The causes of London's preeminence are clearly shown.

At times, Professor Furniss has been unable to make his explanations sufficiently clear to be grasped on the first reading. The cause for this, however, seems to lie principally with the intricacy of the subject, although in the preface Mr. Young states that the reputation of foreign exchange for obscurity is undeserved. The book, though primarily suitable for students, well merits the attention of the business man who wants to understand the economic principles as well as the practical methods involved in foreign exchange.

Clark, Fred E. PRINCIPLES OF MARKETING. *New York: Macmillan, 1922. 570 pp. $3*

ONLY within the last decade has Marketing become the subject of scientific study, and only within the last few years have writers attempted to cover the field with any degree of completeness. Professor Clark, who recently has attempted the task, has succeeded notably with his *Principles of Marketing*. His comprehensive and logical treatment of the subject and his clarity of style entitle the book to a place among the best of the pioneers in the field.

In common with most other writers on the subject, Professor Clark uses the functional basis of approach. He divides the marketing functions into three main groups: first, the functions of exchange, which include demand creation (selling) and assembly (buying); second, the functions of physical distribution, including transportation and storage; and third, the auxiliary functions, which include standardization, financing, and risk-taking. Each of these functions is discussed in turn, principally in terms of the existing agencies which perform them. Recent tendencies, such as the assumption of wholesale functions by the manufacturer and the entrance of the wholesaler into the manufacturing field, are emphasized.

The final chapters contain discussions of such topics as the determination of market price, price maintenance, the relation of the state to marketing, the elements of marketing efficiency, and the cost of marketing. The greatest improvements in the efficiency of our marketing machinery, in the opinion of Professor Clark, must come as the result of governmental action and the cooperation of business men in putting into effect ideas gained through careful study and investigation.

The point of view throughout the book is that of the student of the subject, but the atmosphere is not entirely academic. The business man who desires a readable general survey of the field of commodity distribution, with emphasis on the significance of the market structure in the light of the economic needs of society, will find it in this book.

BOOK NOTICES

Basset, William R. and Heywood, Johnson. PRODUCTION ENGINEERING AND COST KEEPING FOR MACHINE SHOPS. *New York: McGraw-Hill, 1922.* 311 pp. $3.50.

The authors here present in clear, non-technical language a detailed description of a system of production planning and cost keeping for machine shops. The methods described are the result of long experience in installing such systems and should be applicable in the great majority of cases.

The aim of the authors is "not only to bring practical assistance to the production managers, foremen, and cost accountants of machine shops, but to give the higher executives a knowledge of the best in shop management practice, so that they may judge how effective are the methods used by their subordinates." They have done their work well. The book is full of helpful suggestions based on the most approved modern scientific practice.

Binder, Rudolph M. BUSINESS AND THE PROFESSIONS. *New York: Prentice-Hall, 1922.* 433 pp. $3.

In this book, which is based on the material of a course in the New York University School of Commerce, the author shows "that modern business is based largely on the work of the professions, and that it should render social service more heartily by becoming professional in motive." He emphasizes the fact that leadership in society has passed into the hands of business, points out some of the shortcomings of modern business, and shows how the adoption of the professional spirit by business men would put an end to these shortcomings and bring other positive advantages as well. "Necessity," he believes, "will compel us to adopt the professionalizing of business sooner or later."

Cassel, Gustav. MONEY AND FOREIGN EXCHANGE. *New York: Macmillan, 1922.* 287 pp. $2.25.

In this volume Gustav Cassel, the well-known Swedish economist, daringly assails the policy of all the central banks of the world. He contends that during the inflation period of 1915-20, discount rates should have been raised enormously. This, he believes, would have prevented inflation. He also condemns the efforts of the central banks to bring about deflation. Though this volume is written primarily for economists, bankers and business men interested in the fundamental theories of money and foreign exchange, although probably disagreeing with the author's conclusions, may be stimulated by them.

Conant, Luther, Jr. A CRITICAL ANALYSIS OF INDUSTRIAL PENSION SYSTEMS. *New York: Macmillan, 1922.* 262 pp. $1.75.

The fundamental principles underlying the industrial pension problem as they appear to the author after an investigation made by him for the Bemis Brothers' Bag Company are set forth in this book. His research included the examination of a large number of existing systems and the ascertainment of the opinions of leading men on the subject. After discussing the advantages and disadvantages of each of the three types of systems now in use, he reaches the conclusion that none of them approaches a reasonably attainable ideal. As a substitute he suggests a system of cumulative paid-up annuities and defends it at length.

Dixon, Frank Haigh. RAILROADS AND GOVERNMENT: THEIR RELATIONS IN THE UNITED STATES, 1910-1921. *New York: Scribners, 1922.* 384 pp. $2.75.

As the title implies, the subject matter of this book is mainly historical. The author has performed a real service in gathering all the detailed information available regarding the period mentioned and in presenting and interpreting it in readable form. Special attention is devoted to an analysis of the provisions of the Transportation Act of 1920.

Though no permanent solution of the railroad problem is offered, a national program of cooperation is suggested as the most satisfactory line of development for the years immediately ahead.

The book has been written primarily for teachers, to serve as a supplement to existing texts, but the importance of the subject and

the interesting manner of treatment commend it to the general reader as well.

Edwards, G. W. FOREIGN COMMERCIAL CREDITS. *New York: McGraw-Hill, 1922.* 242 pp. $2.50.

Mr. Edwards furnishes the business man with an excellent up-to-date manual on foreign commercial credits. He clearly shows not only the practical but the legal principles underlying the letter of credit. The book is "of interest to bankers, business men, and attorneys who are engaged in applying these principles to specific problems."

Fisher, Boyd. MENTAL CAUSES OF ACCIDENTS. *Boston: Houghton Mifflin, 1922.* 315 pp. $2.50.

On the basis of wide experience in large industrial plants, the author undertakes to analyze the psychological side of industrial accidents, the importance of which is not yet fully appreciated. The various mental factors which may have affected the workers injured are discussed in detail, with numerous examples, and types of remedies are suggested.

The book is a real contribution to the subject and should be of value to factory executives and safety men who have to deal with the problem of the causes and prevention of industrial accidents.

Fleming, A. P. M. and Pearce, J. G. RESEARCH IN INDUSTRY: THE BASIS OF ECONOMIC PROGRESS. *London: Pitman, 1922.* 244 pp. $4.

Strongly emphasizing their belief that social progress is dependent upon the increasing productivity and efficiency of manufacture, which can only result from industrial research, the authors discuss the nature of research, its application to industry, the manner in which existing research resources may be used by industry, recent developments in cooperative action of manufacturers for the conduct of research, the best methods of establishment and operation of research laboratories in individual concerns, and the progress in the world-wide movement towards the foundation of research institutions. A bibliography of the more important books and periodicals on the subject is appended.

Though the authors are Englishmen, the conclusions are fully applicable to American industry, from which much of the material is drawn.

McKee, Henry S. THE A B C's OF BUSINESS. *New York: Macmillan, 1922.* 135 pp. $1.

Believing that we are a nation of "economic illiterates," Mr. McKee strives in this book to enlighten the popular mind on some of the elementary principles of economics which underlie our industrial organization. In simple, straightforward language he discusses the character of our business organization, the popular misunderstanding of money, the distribution of wealth and the economic function of capital, the elements of banking, the abuse of our railways, and the functions of organized speculative markets. The chapters on the business consequences of the war and on internationalism and America's place in international business are especially interesting. "There is, and has been, a commercial league of nations which cannot be abolished," and, "America's interests are joined inextricably with those of other countries."

Northwestern University Bureau of Business Research, Horace Secrist, Director, in cooperation with the National Association of Retail Clothiers. *New York: Prentice-Hall, 1922.*

No. 1. *Costs, Merchandising Practices, Advertising and Sales in the Retail Distribution of Clothing* (1921, pp. 622, $15 net).

Vol. 1. Sales and Sales Ratios in Retail Clothing Stores, 1919, 1918, and 1914.

Vol. 2. Expenses and Expense Ratios—Rent, Wages and Salaries, 1919, 1918, and 1914.

Vol. 3. Expenses and Expense Ratios—General, Busheling, and Total Expenses, 1919, 1918, and 1914.

Vol. 4. Advertising Methods, Expenses and Expense Ratios, 1919, 1918, and 1914.

Vol. 5. Purchases, Inventories, Purchase Discount, Stock Turnover, and Capital Turnover, 1919, 1918, and 1914.

Vol. 6. Buildings and Store Equipment, Merchandise Sold, Store Methods and Accounting Practices, 1919—Summary of Expense- and Trade-Tendencies, Questionnaire, and Index.

No. 2. *Selling Expenses and Their Control —a Study in the Retail Distribution of Clothing* (1922, pp. 416, $4.25 net).

No. 3. *A Business Barometer for Retailers* (1922, 50c).

No. 4. *Stock Turnover in Retail Clothing Stores—A Barometer of Expense- and Trade-Tendencies* (1922, 50c).

No. 5. *Amounts Sold per Full-time Salesmen in Retail Clothing Stores—A Barometer of Expense- and Trade-Tendencies* (1922, 50c).

No. 6. *Control of Expenses and Profits in the Retail Merchandising of Clothing* (1922, 50c).

These publications present a constructive analysis of the principal phases of the retail clothing trade.

The foundation of the study rests on information furnished by over 550 members of the National Association of Retail Clothiers. The data have been compiled elaborately and are presented in detail. The aim throughout has been to discover standards which will serve as guides for determining business methods and policies. The stores are classified according to geographical location, according to sites within a city, and according to volume of sales per year. This affords every merchant a means of comparing his own business with that of others.

The first two numbers are complete and exhaustive studies of the ground covered. The remaining publications are 10- to 20-page pamphlets which summarize some of the most important points taken up in the complete survey of the first two books.

Penty, Arthur J. POST-INDUSTRIALISM. *New York: Macmillan, 1922.* 157 pp. $2.

The term Post-Industrialism "means the state of society that will follow the break-up of" our present Industrialism, which in the author's view is doomed to early extinction. The unrestricted use of machinery and the fine subdivision of labor, which are the main features of Industrialism, have within them the germs of the destruction of civilization, and society, if it is to survive, must retrace its steps to the principles of the mediaeval handicraft system.

While few will agree with the author's conclusions, his discussion is at least provocative of thoughtful consideration of our industrial system.

Shrubsall, Frank W. EFFICIENT SALESMANSHIP: THE ORGANIZATION AND MANAGEMENT OF THE SALES DEPARTMENT. *London: Pitman, 1922.* 118 pp. 75c.

With no pretention to exhaustive treatment, this book gives brief outlines of the essential points relating to sales department organization and management. The points discussed, which are the outcome of many years' practical experience in sales department organization in various trades, fall into two main groups: (1) those relating to the interior organization, and (2) those dealing with exterior work or the sales force.

The author's aim is to be of aid to those just entering business and desiring information as to the best methods of organizing and directing their selling departments. The experienced man of business will find in the book little which is not already obvious to him.